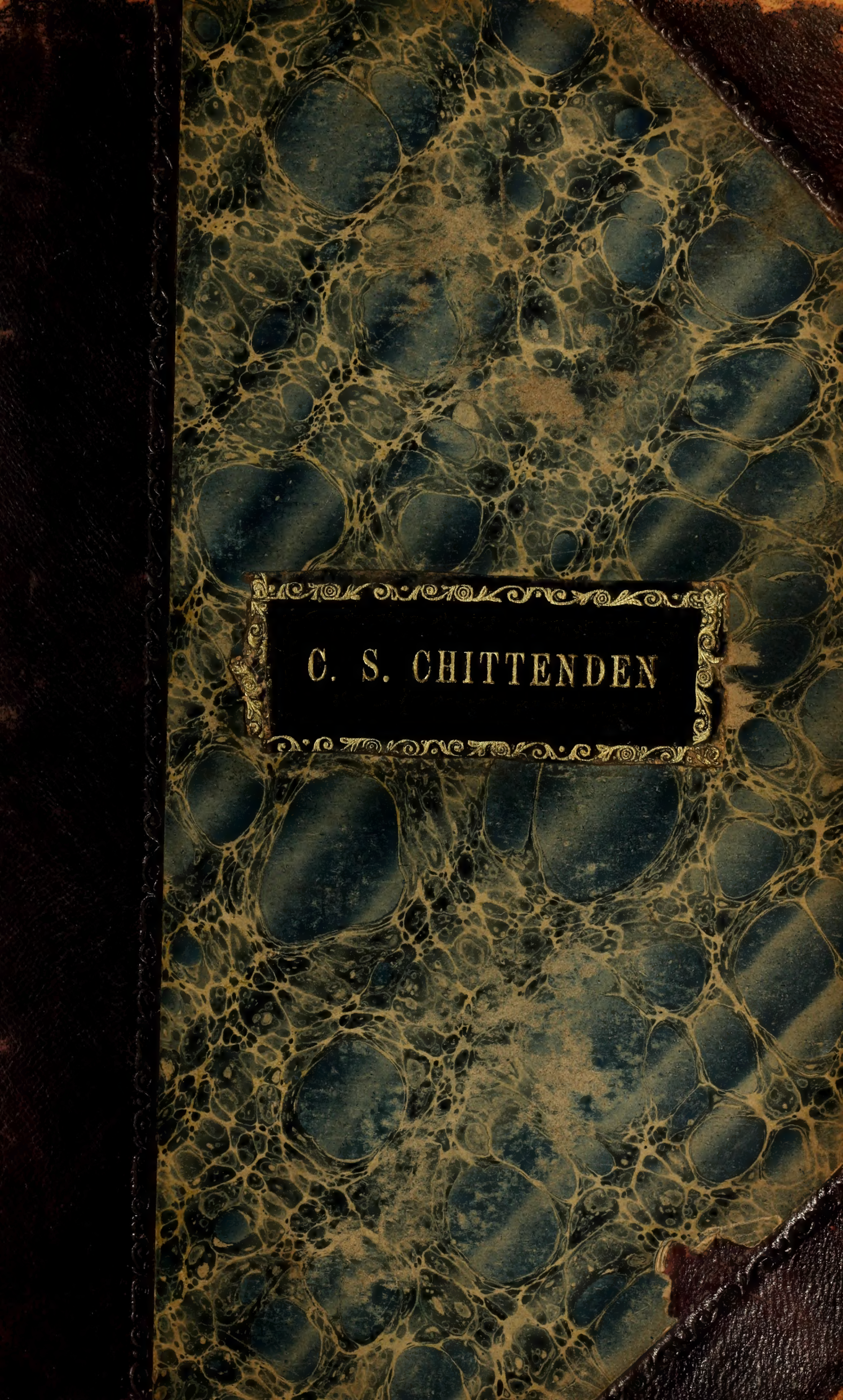

C. S. CHITTENDEN

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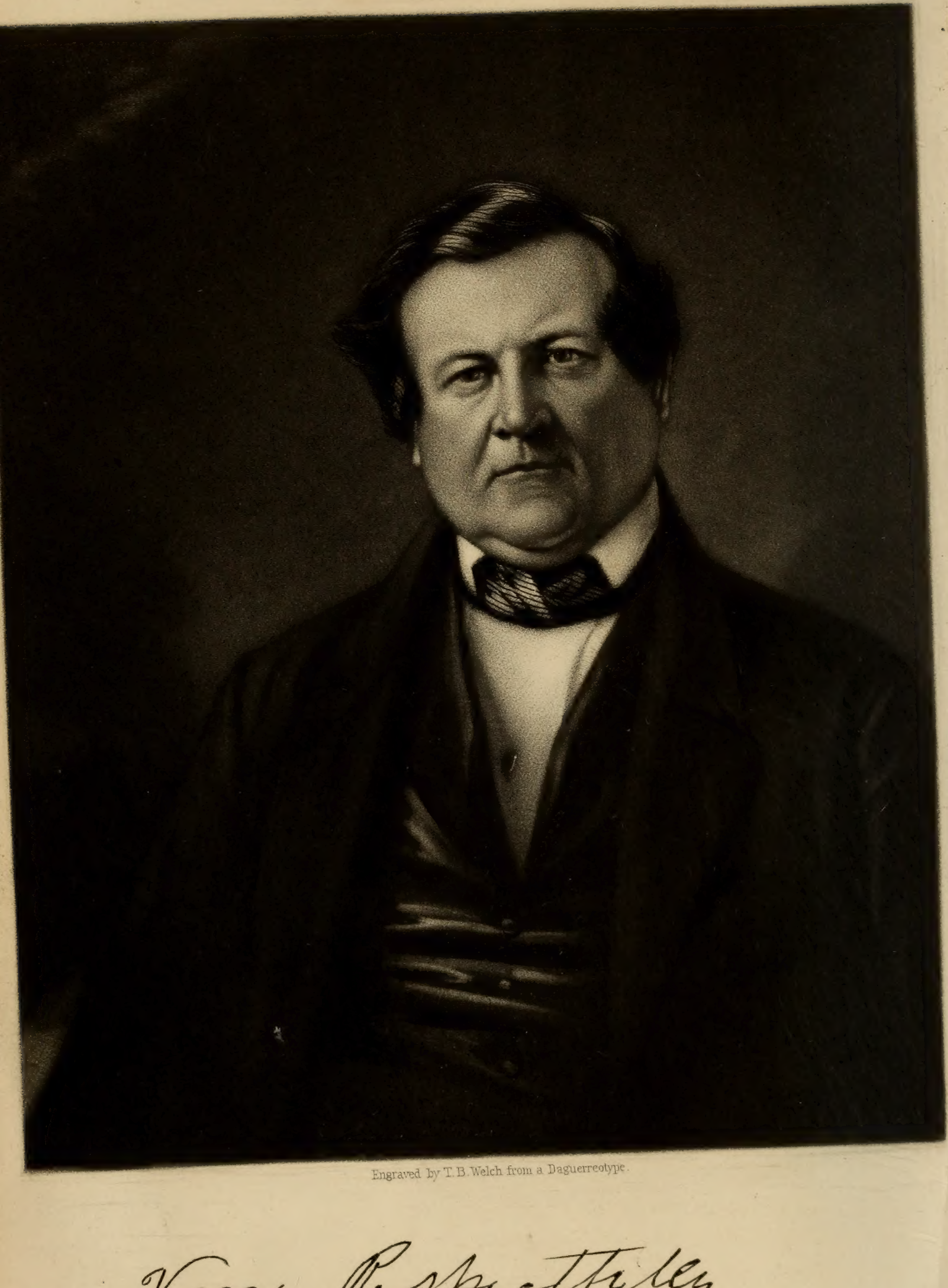

Engraved by T. B. Welch from a Daguerreotype.

Very Respectfully

John T. Shotwell

THE

DENTAL REGISTER OF THE WEST.

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Original Essays and Communications.

FILLING TEETH.

BY J. TAFT.

In the following general remarks upon filling teeth, the examination and treatment of the pathological conditions to which they are subject are left entirely out of view. The various steps of the operation will be described, and the different modes of accomplishing each step, at least so far as they possess any merit, will be examined. Our object now is to inquire how fillings can be most perfectly introduced into decayed teeth, under the circumstances in which we find them. We prefer, first, to consider that part of the subject which is merely operative or manipulative, and afterwards pathological conditions, their nature and treatment. By this course, but one principal subject is brought before the mind at one time. And we think it is better to take but one point, and consider it thoroughly, and pass on to another.

The operation of filling the teeth is an interesting and important one. It requires considerable peculiar talent and large experience for its perfect execution. It is the only means, at present in use, of effecting the object for which it is employed. The principal reliance for success is upon the operation. Therapeutic agents will do but little. So low is the organization, and so feeble the vital power, that far less is obtained from this source here, than in more highly organized structures. Nature does but little toward restoration or arrest. But such is the nature of the structure, that its decomposition is scarcely effected except by the active agency of potent foreign substances. The enamel is almost invulnerable to agents with which it ordinarily comes in contact.

The dentine is far more easily acted upon, and when there is a defect in the enamel, it is very liable to injury.

Scarcely any person arrives at mature age with a perfect set of teeth. Nine-tenths in our own country have decayed teeth at an early period of life. In operating for the preservation of any organ or set of organs so important and useful as the teeth, everything should be done to secure a successful result. No half-way work is admissible; perfect work should always be the aim. No one should rest contented until he has arrived at perfection, and none of our *best* operators have arrived at that point.

Every step in the process of filling a decayed tooth should be as perfect as possible, and the better method is to make each step perfect before passing to another.

I propose in the following remarks to analyze the subject somewhat, and examine the successive steps in the order in which they occur, endeavoring to ascertain the true method of accomplishing each.

EXAMINATION.

The first thing, when a case is presented, is an examination, and it should be thorough; for all the subsequent work will be modified by it. The points that should be noted in the examination are the following, viz:

The constitution and temperament of the patient.
The health.
The constitutional tendencies.
The general condition of the mouth.
The secretions, the saliva and mucus.
The mucous membrane and gums.

The constitution of the teeth, and their condition.

The number of teeth remaining in the mouth.

The number of teeth affected.

The extent of the decay, its nature, and the character of the agents producing it.

Thus the indications are ascertained. Whether general or local therapeutic treatment, if so, what kind, and to what extent; but to these particular reference will be made hereafter.

By the examination we ascertain how to proceed in the operation. If a great amount or but little labor is required, whether the operation will be a simple or a difficult one; and if difficult, what circumstances render it so, and, too, some conclusion is arrived at in regard to the permanency of the operation.

OPENING.

The next step is opening the cavity of decay, so that it may be approached and operated upon at all points. The particular manner of performing this is modified by the extent of the decay, and its position upon the tooth. In all cases the opening should be such as to give free access to all parts of the cavity, for removing effectually the decayed portion, for perfectly forming the cavity, and for introducing and thoroughly consolidating the filling. In central crown cavities of the molars and bicuspids, the projecting or pendant portions of enamel should be cut away.

There are cases, however, where such portion is firm and not liable to be broken, and where it can be well sustained by filling under, in which it is admissible to leave some projection. This is only true of those teeth that are of good, firm texture.

There are these two objections that may exist to these abrupt projections of enamel: It is very difficult, and in many cases impossible to fill perfectly beneath such portions; and again, it is very liable to be broken down during mastication.

For opening up these cavities, in many cases the bur drill alone will be quite sufficient, using them of different sizes, to open up the orifice gradually, so that too much violence may not be done to the teeth. In all very small cavities, the bur is all that is required.

In cases where the decay is more extensive, and the cavity larger, in connection with the drill, the chisel or heavy cutting instrument will be found very useful. By its use the operation will be very much facilitated, and less jarring will be communicated to the tooth ; but after it is used, the bur will be required to give a smooth, uniform border to the cavity. In these cases, the orifice should be almost or quite as large as the cavity is within.

In approximal decay, the cavity must be sufficiently exposed to enable the operator to see distinctly into it, and to manipulate freely in all parts of the operation. These cavities may be exposed by the use of the chisel, or the file, or by pressure. The separation of the teeth I have elsewhere considered at some length. (See Dental Register, vol. 8, p. 260.)

REMOVAL OF DECAY.

After the cavity is opened, the next step in order is the removal of the decayed dentine. As a general rule, this should be entirely removed. There is, however, some variety of opinion upon this subject. This difference of opinion is in regard to cases where the entire or partial decomposition of the dentine has taken place quite to the pulp, and where, by its removal, the pulp would be exposed. It is maintained by some that decayed dentine affords a better protection to the nerve than any artificial covering can do, and hence it is better to let it remain. Its adaptation to the pulp is more perfect than any artificial covering would be, and it is not in every sense a foreign substance.

Upon the other hand, it is maintained that the decayed dentine will, being in an abnormal condition, irritate, and in many cases ultimately destroy the pulp. And again, that there is danger of making undue pressure upon the pulp, in filling on such softened portion.

In many cases, it is maintained that partially decomposed dentine will become dense again, if protected from the influence of foreign agents that decompose it. This sometimes would seem to be true. For in some cases where fillings have been introduced into cavities at the bottom of which a softened portion of dentine covered the nerve pulp, upon removing the filling in from one to five years afterward, the whole walls of the cavity were found to be equally and normally dense.

This, I suppose, would occur only in good constitutions, and under favorable circumstances; but with such a constitution and circumstances, where the softening was not too extensive, and the decomposition but partial, I should not hesitate to let it remain, and should entertain confidence of a happy result. This would certainly be better than to cut it all away and expose the nerve, and perhaps wound it, and then endeavor to cover it with some wholly foreign material that would not be perfectly adapted to it, that would press a little too hard at one point, and not touch at another, and that would be just as liable to be pressed down on the pulp as the softened dentine.

In this discussion, much depends upon the point whether partially decomposed dentine can retain its vitality. This I do not now propose to consider.

There are some particulars in regard to the removal of decay, about which there is no diversity of opinion. First, that all decomposed dentine should be removed from all parts of the cavity, where the pulp would not be exposed or injured thereby, and in *all* cases it should be entirely removed from the lateral walls of the cavity, and especially from the vicinity of the orifice. Even discolored dentine should be removed from this point.

Dentine often becomes changed in color when there is no apparent decomposition; such portion is usually, though not always, without vitality. It is not important to remove such changed portion, except for the appearance of the tooth; it will produce no change upon the living or normal part beyond it; and it is better material to be in contact with the living part than the metal of which the filling is made.

Decayed dentine is readily removed with the excavators, a description of which is given elsewhere. In any given case, that instrument should be selected that would be best adapted for the purpose, both in regard to size and the form of its edge, as well as curvature or inclination of its shaft. The edge of the instrument should come upon the walls of the cavity at such an angle as to accomplish the work most efficiently. It should be very sharp, and pressed firmly to the bottom of the decay at one side, and the principal part of it removed at one cut. With the proper instrument, and it in the right condition, all the decay should be removed from any cavity by a very few, firm, steady strokes. By this method the patient has less pain, and the work of the operator is facilitated. It is intolerable to think of being subjected to an awkward, clumsy hand, with a dull, ill-shaped excavator, scratching upon the surface of a decayed tooth, for, to the patient, an almost interminable length of time.

DENTAL CHEMISTRY OF THE MOUTH.

BY GEO. WATT.

At the close of our article on MUCUS, we proposed in our next to consider the various articles which, in ordinary life, exert an injurious chemical influence on the teeth. We did not then properly estimate the magnitude of our promise, nor appreciate the numberless difficulties that lay in our way. Having come to our senses in this respect, we now only propose to do something, if we can, toward the fulfillment of our promise.

To properly understand any chemical action to which the teeth are subject, it is necessary to bear in mind their texture and composition, and to consider the chemical properties of at least their principal constituents. It must also be remembered that the teeth are endowed with vitality. As dental caries, the most common disease of the human race, is now universally conceded to be the result of chemical action, the importance of this subject is at once manifest. The time is not far distant when, in every case of recent caries, the enlightened practitioner will be able, by the character of the decay and the habits and constitution of the patient, to detect and identify the agent or agents producing the disease. Any practice short of this knowledge must be, at least to some extent, guesswork, and is, although the best we can now do, empirical practice.

The fact that an active alkaline base is the principal inorganic ingredient of the teeth would indicate clearly that their great danger lies in the presence of acids; and all experience demonstrates the truth of this inference. This danger is also greater from the fact that the principal salt of this base, present in the tooth substance, combines with several acids without undergoing decomposition.

It is evident that the acids do not all act alike on the teeth. Indeed, some exert no influence whatever on them, while others act with great energy on each and all of their constituents. It would be an endless task to consider all the subtances which are capable of exerting an injurious chemical influence on the teeth; and, perhaps, it would be as unprofitable as endless. All that is now aimed at is an accurate account of the various substances which ordinarily act chemically on the teeth—which produce caries and "chemical abrasion."

But without farther preface, we will proceed to notice some of the chemical agents alluded to.

NITRIC ACID.—This acid is composed of five equivalents of oxygen united with one of nitrogen. Its symbol is, therefore, $N\,O._5$ It acts with great energy on all the constituents of the tooth. Its great energy of action depends on a variety of circumstances. As an acid, it unites energetically with bases, and will, therefore, take the lime and kindred bases from the weaker acids. From its ready decomposition, it affords oxygen, in its nascent condition, for the destruction of oxydizable substances. Its action on the tooth may be thus briefly described: It dissolves the phosphate of lime, decomposes the carbonate, setting the carbonic acid free, and forming nitrate of lime, and destroys the organic portion, producing a highly softened state of the carious matter. In fact, it is a prominent, if not the principal agent in the production of the "white decay."

But the question naturally arises, Is an agent so destructive in its tendencies likely to come in contact with the teeth, and if so, under what circumstances? The question is important, and the answer, perhaps, difficult.

It is well known that this acid is frequently administered as a tonic; and it is a lamentable fact that far too little attention is paid to the prevention of its injurious effects on the teeth in such cases, but this will by no means account for the frequency with which it evidently injures the dental organs. A few thoughts in regard to its formation may throw some light on the subject.

It is a singular fact that though nitrogen and oxygen manifest but little affinity for each other, yet they unite in various proportions, forming at least five well known distinct compounds. It appears, however, from a variety of circumstances, that their tendency is to unite in the proportions which form nitric acid. The protoxyd is readily decomposed, and yields nitrogen, oxygen, and *nitrous acid.* The binoxyd, if brought in contact with the atmosphere, takes from it two equivalents of oxygen, and also becomes *nitrous acid*, or $N\,O_4$. Hyponitrous acid, $N\,O_3$, on admixture with water, is converted into nitric acid and binoxyd of nitrogen, thus: $3N\,O_3 = N\,O_5 + 2N\,O_2$, in which case the latter will be converted into nitrous acid, which, in the presence of water, is converted into *nitric acid* and binoxyd of nitrogen.

It follows from this that, if oxygen and nitrogen unite at all in the mouth, let the proportions be, at the first, what they will, nitric acid must be the ultimate result—as air and moisture, the only agents necessary in the transformation, are here always present.

The reader will now think of the mucus, and particles of nitrogenous food lodged about the teeth undergoing decomposition, and yielding nitrogen to the oxygen of the atmosphere, or of the fluids of the mouth, and will conclude that all is explained. Well, perhaps it is. But let us consider. Nitrogen is emphatically a "conservative" element, and manifests but little tendency to unite with anything, and especially with oxygen. It is probable, therefore, that these two elements unite indirectly. It should be borne in mind that organic nitrogenous bodies contain hydrogen and oxygen, as well as nitrogen. Consequently, by their decomposition, these elements are all liberated. The mutual affinities of hydrogen and nitrogen take precedence, and the result is the formation of ammonia, $N H_3$. But ammonia, exposed to the action of oxygen, is always decomposed; an oxyd of nitrogen being formed, and of course *nitric acid* is the result.

With this view of the case, and from the fact that many persons permit the buccal mucus, as well as particles of nitrogenous food, to remain around, upon, and between the teeth, till decomposition is effected, it is not surprising that the white variety of dental caries is so frequently found.

Nitric acid is also sometimes formed in the mouth by the agency of galvanic action. When two metals are placed in the mouth in proximity to each other, and the fluids of the mouth are capable of acting on one of them, galvanic action is established. And if they are so situated that the mucous membrane forms a connecting conductor, by being in contact with both, especially if the metallic surfaces be considerable, a current is established, sufficient to decompose any of the binary compounds contained in these fluids. The liberated nitrogen, hydrogen, and oxygen will result, as above, in the formation of ammonia, and then, nitric acid. But galvanic action in the mouth is more likely to develop hydrochloric, than nitric acid. This will be noticed again.

SULPHURIC ACID.—Sulphuric acid is composed of 16 parts of sulphur united with 24 of oxygen. Its symbol is, therefore, SO_3. In addition to those properties which characterize it as an acid, it is a powerful caustic poison, and promptly destroys the various tissues with which it comes in contact. Its chemical action on ordinary tissues depends principally on its affinity for water, but not altogether; for it has the ability to coagulate and unite with albumen, and to dissolve fibrin. In common with other acids, it has a strong affinity for alkaline bases.

With these properties in view, let us examine its action on the teeth.

The affinity of this acid for water is so energetic that it seems even to force its elements to forsake favorite combinations, and to unite with each other, that it may be gratified. For example, a cork in a bottle of sulphuric acid becomes dark colored, and is really charred. Now, a cork, like other wood, is mainly composed of carbon, hydrogen, and oxygen—the two latter being in the proper proportions to form water. Their affinity for each other, quickened by that of the acid for the result of their combination, causes them to forsake the carbon, unite with each other to form water, and then combine with the acid. The same phenomena occur when it acts on animal tissues; for they are principally composed of the above named elements, with the addition of nitrogen. Accordingly, "black spots are frequently observed in the stomachs of those who have swallowed the acid." Now, that its slow and prolonged action on the gelatinous portion of the tooth would result in its carbonization is a conclusion justified both by inference and experiment. But carbonized gelatin is "animal charcoal," the color of which is a prominent characteristic of "black decay."

The phosphate of lime in the tooth, which is not the neutral, but a subphosphate, is not soluble in sulphuric acid; nor is the acid capable of decomposing it, except in the presence of alcohol. It follows, then, that this acid does not break down the texture of the tooth to the extent that some others do, simply because it cannot unite with, or, under ordinary circumstances, decompose the principal earthy salt of which it is composed. And here we have a second characteristic of "black decay."

It is now time to inquire whether at all, and if so, by what means, and under what circumstances this acid is brought in contact with the dental organs.

Sulphuric, like nitric acid is frequently administered as a medicine, and generally with criminal negligence in regard to its action on the teeth. But we cannot regard this as the only or principal source of danger from this acid. If oxygen unites at all with sulphur, the tendency, under ordinary circumstances, is to the formation of sulphuric acid, as sulphurous acid, in the presence of moisture, is rapidly converted into the sulphuric. The whole question, then, is reduced to this,—Is sulphur ordinarily present in the mouth, and liable there to become oxydized?

Albumen is a constituent of mucus, and is contained in many articles of food. Sulphur, if not a constituent of, is always united with albumen. Its ordinary presence in the mouth is, therefore, easily explained. Sulphur and oxygen unite directly, under various circumstances, as in the combustion of sulphur; but it is probable that the union here is effected by indirect means. Hydrosulphuric acid, or sulphureted hydrogen, is one of the results of the putrefactive decomposition of albuminous substances. The breaths of our patients often bear ample testimony to its presence in the mouth. Now, the oxygen of the atmosphere rapidly decomposes this acid, by taking its hydrogen to form water. The sulphur is, therefore, set free, and being in the nascent state, its affinities are increased in energy, and it also unites with oxygen, forming sulphurous acid, $S\,O_2$, which in the presence of the water of the saliva, is rapidly converted into sulphuric acid, or $S\,O_3$.

The quantity of sulphur present in the mouth at any one time is very minute; and a great proportion of this is exhaled by the breath, before it has time to undergo decomposition. And sulphuric acid, as already noticed, has a weaker affinity for the constituents of the tooth than some others. Hence, "black decay" is not so frequently met with as some other varieties. And as, from the nature of the chemical action, the texture of the tooth is not so entirely broken up, the carbonized portion protects the parts beneath it. This variety of decay, therefore, progresses less rapidly than others.

HYDROCHLORIC ACID.—This acid is also called chlorohydric, and muriatic acid. It is composed of 35 parts of chlorine, united with 1 of hydrogen. Its symbol is HCl. Though its elements manifest a strong affinity for each other, yet it is very readily decomposed; and many of its chemical manifestations result from the action of one or both of its liberated elements. It is on this principle the acid attacks metals—being decomposed the chlorine unites with the metal to form a chloride, and the hydrogen escapes with effervescence.

This acid, like those previously considered, is a caustic poison. Its escharotic power depends, mainly, on its affinity for water, which is very active; and on its ability to coagulate albumen. Its chemical action is generally inferior to that of the two acids just considered. It unites with bases, forming a class of salts called hydrochlorates; and sometimes it combines with a salt without decomposing it, or being itself decomposed. When concentrated, it dissolves animal tissues, but is, in this respect, far inferior to nitric acid. When much diluted and mixed with dried mucous membrane, it dissolves coagulated albumen, fibrin, &c., performing, to all appearance, an artificial digestion.

A careful observation of these properties will enable us to understand the action of this acid on the tooth.

The carbonate of lime and the acid are mutually decomposed. The results are chloride of calcium, water, and carbonic acid. The decomposition may be represented by the following equation:—

$$Ca\,O,\ C\,O_2, + HCl = Ca\,Cl + H\,O + C\,O_2.$$

The carbonic acid, of course, escapes as a gas, and the chloride, being very soluble, is dissolved in the saliva, and thus removed from the tooth.

The phosphate of lime, (bone phosphate) though not decomposed by, is highly soluble in hydrochloric acid. It is dissolved, and is thus removed from the organic portion of the tooth.

We have seen that this acid, unless highly concentrated, is not capable of dissolving the animal portion of the tooth. As this concentration is not likely to take place in the mouth, it follows that, when hydrochloric acid is the cause of dental caries, the earthy portion is dissolved and removed, while the animal portion principally remains in the carious cavity. And here we have the prominent characteristics of a third variety of decay.

I have not taken into the account any of the earthy salts contained in the tooth, but the phosphate and carbonate of lime. They are present in such small quantities that they exert but little influence on any of the chemical actions which we have considered.

Hydrochloric acid is also administered as a medicine; and the remarks made on the preceding acids apply equally here. This acid is an ingredient of the gastric fluid, and is often present, in abnormal quantities, in the stomach, from which it is thrown into the mouth by eructation and vomiting. But we can not thus account satisfactorily for the frequency with which the dental organs are evidently injured by this acid.

Though in its normal state the saliva is alkaline, yet in a variety of abnormal conditions it contains one or more free acids; and the hydrochloric is one of those most frequently present. It often originates, no doubt, in the decomposition of the soluble chlorides contained in the saliva and mucus. When the chlorine of these is liberated, it takes hydrogen from the water of the saliva, and this acid is a result of the union.

But, sometimes, hydrochloric acid is directly furnished by the salivary glands, either as a secretion or an excretion. The system may contain just its normal quantity of chlorine, but, if there be a deficiency of sodium or potassium, the relative excess of chlorine is converted into hydrochloric acid. In this case the acid is secreted. Or the quantity of potassium and sodium may be normal, with an excess of chlorine. The excess will unite, as before, with hydrogen, and the acid will be excreted. At all events, this acid is usually found in the mouth when the mucous membrane is inflamed, as well as in patients who indulge in the excessive use of salted meats.

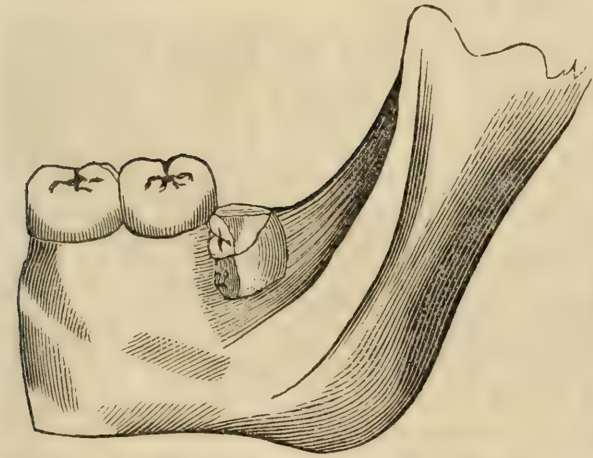
Galvanic currents in the mouth always result in the formation of this acid. The chlorides of sodium and potassium, present in normal mucus and saliva, are decomposed, and their chlorine unites with hydrogen derived from the water of the saliva. It is on this principle that we frequently find a decayed surface around a gold filling, which is in close proximity with one of a different metal, or with a silver plate or clasp. In such decays, the animal portion usually remains, while the earthy portion is removed, just as would be expected from the prolonged action of dilute hydrochloric acid.

In these observations we have endeavored to set forth the results of the ordinary uninterrupted action of these acids on the teeth; and we have seen that they are capable of producing the three varieties of decay usually described, though we by no means maintain that they are the only agents capable of causing these results. Their actions, and consequently the characteristics of decay produced by them, are doubtless much modified by circumstances. One of them may be the destructive agent in the commencement of the caries, and, in process of time, another may be developed, and exert its specific influence on the same cavity. Then the phenomena would, of course, be complex. Again, it should be remembered that a strong affinity for water is a property common to all of them. It is possible, therefore, that carbonization, or blackening, may result from the action of any of them, yet it is by no means probable, at least with nitric acid.

But this paper is long enough. We originally intended to include in it the action of several organic acids, but our knowledge of them was too limited; and our experiments with them are not sufficiently matured to enable us to state results with any degree of confidence. Indeed, we find it difficult to conduct some experiments properly, on account of the frequent interruptions incident to the practical duties of the profession. We hope our readers will be patient; but, if any one is not, we would be glad to have him turn his impatience to a good account, by anticipating us in our experiments, and giving his deductions to the profession.

MALPOSITION OF THIRD MOLAR.

BY J. RICHARDSON.



CASE.—Mr. J. T., aged thirty-five, called, complaining of pain in left inferior posterior molar. On examination, I found, just behind and resting upon the posterior face of this tooth, a small rounded portion of bone projecting about a line above the gum. This, on further exploration, proved to be a portion of the posterior face of a displaced or ante-verted wisdom tooth, lying parallel with the jaw, and resting closely with its grinding surface against the neck and roots of the second molar. The anterior half of the crown was deeply imbedded within the jaw, the processes running parallel with the long axis of the tooth. The root or roots passed directly back into the base of the coronoid process. There was nothing peculiar in the arrangement of the other teeth, if I may except some lateral contraction of the lower jaw and a somewhat crowded and irregular condition of the front teeth. The corresponding tooth of the opposite side had been extracted some years before.

We believe that this extreme displacement of these teeth is somewhat rare. An anterior or lateral *obliquity* is of frequent occurrence, but a crown standing directly at a right angle with the adjoining tooth is so seldom met with, that I have thought the case worthy of notice. In the Cabinet of the Mississippi Valley Association, I find a similar specimen contributed by Dr. Platon, of Troy, Ohio. These are the only two cases I have seen.

TREATMENT OF GOLD FILINGS, ETC.

BY G. L. PAINE.

Having passed the magnet through the filings, to remove therefrom the iron and steel, put them in a glass vessel—a tumbler for instance—and pour on them nitric acid. The tumbler may be set in a vessel of water, which should be gradually raised toward the boiling point, in order to accelerate the action of the nitric acid. This action should be continued for several hours, to insure the destruction of such base metals as may be mixed with the gold filings. Pour off the acid, and wash in warm water till the filings are perfectly clean; when dry, melt in a clean crucible with saleratus, then with borax, and in a majority of cases, the resulting button of gold will work as well as the best gold coin.

The metals which we use for male casts, when poured into the mould, will often bubble, or boil, and thus damage the cast. This may be prevented by piercing the bottom of the mould with a number of fine holes, made with a darning needle, or a fine, smooth, straight wire. These little apertures afford an outlet for the steam generated by the hot metal coming in contact with the moist sand, and the integrity of the cast is thus secured.

The warping or springing of a full upper set may to a very great extent be prevented by attaching to the plate just behind the heel teeth a couple of points or studs, one on each side. Between these studs pass a steel bar or iron wire, so stiff that it will not be affected by the heat required to solder the case, and the result will be that, if care be taken in heating up the case gradually and evenly, the plate will have sprung but little, if any.

IRREGULARITY—CORRECTION.

BY DR. W. W. ALLPORT.

The following report of a case of irregularity, and its treatment, by Dr. Allport, of Chicago, is very interesting. It is a case that occurred recently in his own practice, and was an extreme case, one that by the ordinary mode of treatment, would have been very difficult, if not impossible, to correct. The appliance is something new, and proved very efficient, in a comparatively short time. The teeth now occupy a good position. The operation produced an entire change upon the face of the patient. The following description of Dr. A.'s is very clear and concise, and by the aid of the cuts, will be at once comprehended.—Ed.

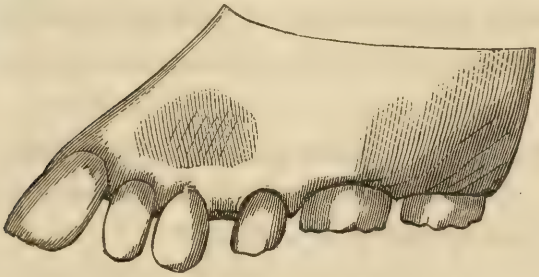


Fig. 1 represents the teeth as in their original position.

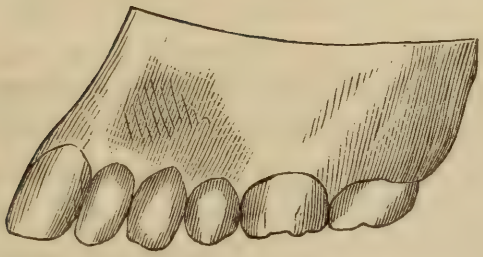


Fig. 2 represents the teeth at the expiration of five weeks after the apparatus was applied.

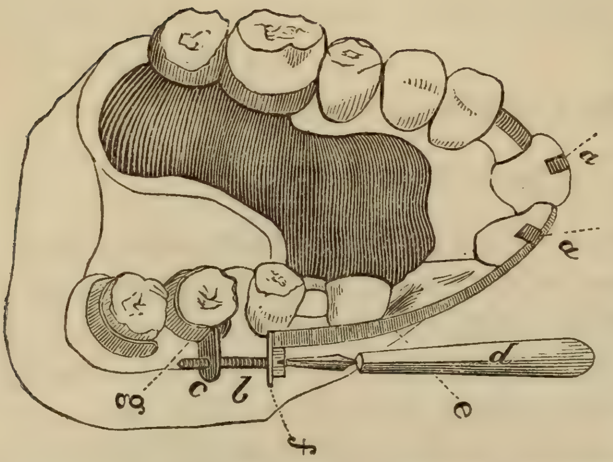


Fig. 3 represents the plate, clasped to two molars, on each side, with the band extending around the outside, and to which are soldered two hooks (*a a*) passing over the ends of the incisors, to prevent the band slipping too high upon the teeth.

To each end of the band is attached a screw (*b*) passing through a nut (*c*) soldered to the clasp, and by means of which the band was tightened every other day, on each side of the mouth, with a screw-driver (*d*).

This process was continued for five weeks; the whole was then allowed to remain without further tightening for two weeks longer, when the apparatus was removed.

To retain the teeth in this position, a plate was again attached to two molars, with narrow strips of gold soldered to it, and passing over the inside, and hooked to the ends of the incisor teeth.

During the whole process, the patient made but very little complaint of soreness, or of inconvenience from the apparatus. The patient was a lady twenty-two years of age.

PARTIAL SETS OF ARTIFICIAL TEETH.

BY H. R. SMITH.

In my last communication I furnished the outlines of inserting full sets of teeth by suction or atmospheric plates. And if the student is sufficiently careful in carrying out the directions, he can not, with a fair amount of skill, fail to give his patient a good operation.

There are other mechanical operations much more common to the young practitioner than full sets, and those that will test his skill even more than full sets, namely, partial sets. In full sets, a few general rules are all that is necessary to be observed to insure success, while with partial sets the circumstances attending each case have more or less peculiarities, and call for a greater degree of skill. But few partial sets succeed according to the wishes of the patient, or even the operator. But to my mind, for the most part it can be traced either to the unskillfulness or neglect of the operator. Perhaps I may be considered as giving too free use of my words when I say this, but nevertheless I believe it to be a fact, and in doing so, I will proceed to state some of the causes of failure.

In the first place, dentists are not generally sufficiently well posted in physiology and pathology to know what is a true healthy state of the mouth and teeth, and the variations from a state of health. Hence, being ignorant of these things, it is not to be expected that they can succeed in making their mechanical operations successful.

The surgical mechanic would not think of affixing an artificial limb to an imperfectly healed or diseased stump after amputation, then why should the dentist expect to succeed under similar circumstances?

It is true, the patient may tolerate a fixture in a diseased mouth, but it will never become fully satisfactory. Then here, let me say, is the most general and prominent cause of all those bad operations which daily come to our notice.

The next cause is the imperfect adaptation of the fixture. It is not sufficient that the piece shall be neatly made and highly finished, although these are essential qualities in the job; but the adaptation to the mouth must be good, or the fixture will be useful only as "show work" to adorn our parlor table, or draw custom from the crowd who demand to see a specimen of our skill, which, as all sensible persons will be aware, does not entirely fill the "bill" which we have proposed.

Then the first indications are a critical and full examination and a correct diagnosis. The causes which have operated to produce disease and decay should be investigated, the effects produced by such disease, and the final result. Certain and absolute effects must follow, in the course of certain diseases, unless by some means we can arrest the cause. When this can be done, we have only to repair the ravages already made, and to avoid the reappearance of the former causes.

When the above is well understood, it will be very easy to succeed in carrying out the indications.

It is not always possible to do what our skill and judgment would demand; when such is the case, the patient should be given to understand that they can not receive, under the circumstances, our best operations. Oftentimes our patients are not able to meet the demand necessary to insure them the best operation. When this is the case, we have one of three courses to pursue: either refuse to operate—to do the job, and share the profits with the patient—or to do a job within the means of the patient. The first may sometimes be best, the second, when we can afford it, always proper, and the third often necessary, and will, while remunerating us, satisfy the patient.

In a former article I gave directions for preparation of the mouth for artificial fixtures, both for full and partial sets.

Then, for partial sets, the first thing is to decide how we shall retain the job in the mouth.

My first preference is, of course, for a suction plate; but unless the plate is made large, it will not be sufficiently firm in the mouth to use for mastication, which all will acknowledge to be one, if not the greatest indication.

For instance, a single central incisor is to be inserted with a plate the size of a dime or a quarter of a dollar. With the best adaptation possible, it could not be well used to masticate with, while twice or thrice the size would make it so.

If the patient can bear the expense, all well, but if not, then we must adopt some other way to insure the best operation for his means.

The only precautions to be taken in making a partial suction plate are those to make an entire piece, namely, a perfect fit, and when admissible, a chamber. The edges of the plate should be perfectly fitted around the necks of the teeth and other parts of the arch, or the air will insinuate itself under, and destroy the suction.

If there is any hard ridge through the median line of the arch, the plate should be relieved from it, or it will rock, and thereby destroy the suction.

Another method is a very good one where there are well defined necks to the remaining teeth, namely, tubes soldered to the plate on each side, so as to bear against the necks of the teeth on each side of the mouth in an antagonizing position. They are made by making a tube about one-eighth of an inch or a little longer, and about one-tenth of an inch in diameter, closed at one end. This is soldered to the plate where the open end will point towards the neck of a tooth, and lay as nearly parallel with the necks of the teeth as possible. Into this is inserted a hickory pivot, which, projecting out of the tube a little, will bear against the neck of the natural tooth.

When the teeth are sensitive, this method has a great advantage over clasps, or any other, when the plate comes in contact with the teeth, as little or no galvanic action can be carried on between the plate and teeth, as the wood is a bad conductor of galvanism.

Another advantage of the tubes is this, we do not have to separate with the file in order to fasten our attachments to sustain the plate. These pivots have to be removed occasionally, but with a little instruction from the dentist, the patient will be able to prepare and adjust them, whenever necessary, for himself.

The next method is by partial or stay clasps, which act in a similar way to the pivot and tube, excepting that it brings the plate in contact with the necks of the teeth.

They are made by fitting stays or partial clasps to go as far around the inner neck of the tooth as possible, without passing between the teeth.

By putting one or more on each side of the plate, and fitting them accurately to the neck of the tooth, will sustain a plate quite perfectly. These stays should, however, be as wide as the tooth will permit of, or the plate will soon have a rocking motion, and that motion would soon wear a groove around the neck of the tooth, thereby causing its destruction.

The next method is when we use entire clasps.

This method has of late been the subject of much controversy, and been by many entirely discountenanced. But I am sorry to say it, many of those who abuse it in public, resort to it very frequently in practice.

But like calomel in medicine, it has gone into partial disuse, because the method has been so much abused in practice.

By the quack, calomel is used, because he does not know how to use any thing else ; therefore he often uses it very improperly.

So it is with clasps in dentistry, men resort to them when they cannot retain their plates in any other way, for they can make their plates stay in the mouth when there is no adaptation. Their jobs are what might be called "plyer work," as most of the fit is made by bending with plyers. Such work must of course cause destruction to the natural teeth.

Another cause for the destruction of the clasp teeth is from an ignorance of the pathological condition of the mouth and teeth.

There are certain indications which should entirely forbid the use of clasps. First, they should never be used on young persons until the teeth are fully organized. Ossification not being completed at the points of the roots and the process yet spongy, the teeth are liable to be loosened in the alveola, and irritation and displacement result. At this stage decay is more liable to attack the teeth, and is more rapid in its course. Also, there being a higher state of organization, chemical and galvanic action acts with greater force.

Secondly, clasps should not be used when a high state of acidity exists in the mouth, for galvanic action is sure under such circumstances to cause destruction to the natural teeth.

But when the teeth are well organized, of a firm, healthy texture, and with alkaline secretions very little objection can be had to clasps.

As a majority of the clasp jobs fail from a want of adaptation, it is to that point we should look for a remedy. I will give a few general directions which should always be observed.

In the first place the plate should be perfectly fitted to the mouth, or well fitted around the necks of the teeth, but should not touch them.

The clasps should be perfectly fitted around the teeth and as wide as the teeth will permit, and set without putting the teeth on a strain.

As inferior gold creates galvanic action, very fine gold should be used, and fine solder.

The work should be done with the greatest care, for it requires greater skill to do a good clasp job, and one that will succeed perfectly, than any other.

And then to ensure success with all partial jobs, the patient should be well advised in relation to keeping the mouth and remaining teeth perfectly cleansed, for when it is not done, food and foreign matter collects around the clasps and teeth, and decay and chemical action will take place, and as a matter of course the teeth must decay, and as a result the poor clasps come in for the blame which should be only laid to the negligence of the patient, or unskilfulness of the operator.

Proceedings of Societies.

AMERICAN DENTAL CONVENTION.

The Third Annual Session of the American Dental Convention was held at the Meionaon, in the City of Boston, on Tuesday, Wednesday, Thursday, and Friday, August 4th, 5th, 6th, and 7th, 1857; commencing on Tuesday, the 4th, at 12 o'clock, M.

The following is a list of the members:

Maine.—A. K. Gilmore, G. W. Reed, and B. T. Cowin, Bath; S. B. Straw, Bangor; J. S. Chase, Hallowell; J. B. Fillebrown, Winthrop; W. Randall, Farmington; C. H. Burr, Portland; J. Mason, Saco; T. J. W. Trussell, Rockland; G. F. Waters, Waterville.

New Hampshire.—J. Smith and A. J. Young, Dover; J. A. Chamberlain and Joseph Austin, Manchester; J. W. Little, Concord; W. Ball, Walpole; J. W. Russell, Winchester; Frank Fuller, E. S. Ryder, and S. Baker, Portsmouth; A. Severance, Great Falls; M. M. Smith, Claremont; E. G. Cummings, Lancaster; A. M. Moore, Lebanon; D. K. Boutelle, Peterboro'; J. A. Reed, Newport; —— Locke, Nashua; S. W. Hale, Oxford; P. Stackpole, Dover.

Massachusetts.—E. G. Tucker, J. A. Cummings, J. Shepherd, E. T. Wilson, A. Ball, N. C. Keep, G. O. Stearns, H. B. Hale, S. P. Bartlett, E. Blake, J. M. Thresher, N. K. Mayo, J. Ayling, O. P. McAllaster, J. Clough, J. A. Salmon, S. Simonds, H. P. Hemmingway, J. J. Wetherbee, Boston; W. S. Phipps, Marlboro'; F. Field, Waltham; S. G. Henry, Westboro'; George O. Fairbanks, Fall River; W. H. Noyes. Gloucester; A. A. Cook, Milford; W. H. Jones, Wooster; C.

E. Thompson, Groton; J. Farnum, Salem; E. Sanborn, Andover; C. Washburn, Bridgewater; Thomas Palmer and C. H. Whitney, Fitchburg; H. N. Macomber, Lynn, H. Collins, Salisbury; J. H. Batchelder and W. L. Boudoine, Salem; George N. Whitney, L. W. Puffer and E. M. Atkinson, North Bridgewater; C. F. Hein, Waterton; S. P. Miller, H. F. Bishop, O. F. Harris and J. Childs, Worcester; J. H. Kidder, Lawrence; F. Searle, M. E. Ames and C. S. Hurlburt, Springfield; D. B. Ingruls, Clinton; C. S. Hicks and C. G. Davis, New Bedford; J. McGregory, Sturbridge; J. Beales, Greenfield; J. Thompson, Sandwich; W. Cutler and D. P. Wilson, South Boston; D. S. Bartlett, Roxbury; E. E. Streeter, North Adams; Wilkes Allen and D. S. Dickerman, Taunton; J. T. Folsom, Gloucester, N. C. Fowler, Yarmouth; A. Lawrence, Lowell.

Vermont.—O. K. Post, Brattleboro'; E. N. Harwood, Rutland; M. Newton, Montpelier; M. Tefft, West Poultney.

Connecticut.—D. H. Porter, Bridgeport; L. Betts and L. Potter, New London; W. Potter, Norwich; R. G. Reynolds, Waterbury, E. E. Crowfoot, Hartford,

Rhode Island.—A. C. Hawes, W. N, Martin, L. N. Seeberry; R. P. Berry, Newport; John A. Robertson, Warren; H. H. Farnham, Westerley.

New York.—A. McIlroy, W. B. Roberts, W. Dalrymple, John Allen, W. H. Dwinelle, B. Lord, George Clay, S. H. Clark, E. A. L. Roberts, G. H. Perine, George S. Hawes, D. J. S. Dodge, jr., E. J. Dunning, C. S. Miles, W. H. Allen, J. M. Crowell, New York City; A. Blakesly, A. N. Priest, H. S. Nichols and L. W. Rogers, Utica; J. E. Ostrander, Oneida; U. Bachelor and J. A. Perkins, Rome; A. Blake, Sardinia; E. Ware Sylvester, Lyons; S. B. Palmer, Tully; S. W. Sutton, Green Point, L. I.; W. A. Palmer, Poughkeepsie; C. D. Hayward, Brooklyn; H. C. Grant, Lima; E. D. Fuller, Peekskill; D. S. Goldey, Oswego.

New Jersey.—A. W. Kingsley and S. E. Armes, Elizabeth; J. C. Robins, Jersey City; W. W. Ward and A. A. Cleveland, Newark.

Pennsylvania.—Elisha Townsend, T. L. Buckingham, A. M. Asy, J. R. McCurdy, C. A. Du Bouchet, C. S. Orum, Philadelphia; W. A. Chittenden, Seranton; T. J. Chandler, Rochester; John Waylan and S. Welchens, Lancaster.

Delaware.—H. Garrett, Wilmington.

Maryland.—C. A. Harris, W. H. Stinson, A. A. Blandy,

J. Wheelwright, Baltimore; H. H. Harvey, Hagerstown; G. S. Fouke and R. R. Booth, Westminster.

Virginia.—J. G. Coates, Big Lick; Jas. Johnson, Staunton.

South Carolina.—S. Blanding, Columbia.

Georgia.—A. W. Allen.

Missouri.—J. Forbes, C. W. Spaulding, A. M. Leslie, St. Louis.

Mississippi.—H. C. Kendrick, Natchez.

Louisiana.—A. F. McLain, Franklin.

Tennessee.—T. B. Hamlin, Nashville.

Kentucky.—D. W. Roundebush, Covington.

Illinois.—W. W. Allport, Chicago; L. B. Branch, Galena.

Michigan.—O. M. Carlton, Ypsilanti.

Wisconsin.—D. W. Perkins, Milwaukee.

Ohio.—James Taylor, J. Taft, Charles Bonsall, W. Storer How, Cincinnati; C. R. Taft, Mansfield; A. E. Lyman, Newton Falls.

W. D. A. and Brown (no residence given. Also, a gentleman from "Lewiston Falls," another from "Wellfleet, Mass." and another of "Boston," whose names we cannot decypher.

[We trust that in future, the names and residences of those attending the Convention may be taken with more care, so that a full and legible list may be made up without difficulty or mistake. In this case, but for *our* list of the names of the dentists in the country, and a copy of a Post Office Directory, we should have given up all idea of anything like a correct list. As it is, there are doubtless many errors, but for such our excuse is abundantly ample.]—EDITOR DENTAL NEWS LETTER.

Prof. CHAPIN A. HARRIS, of Baltimore, called the Convention to order.

The Secretary, Dr. ELISHA TOWNSEND, of Philadelphia, read the names of the Business Committee, by which it appeared that the chairman, and some of the other members, were absent.

Prof. Harris stated that he had received a letter from the chairman, (Dr. J. S. Clark, of New Orleans), stating that he should not be able to be present, and the letter was read.

Dr. W. W. Allport, of Chicago, inquired if it would be expected that the committee should make a report upon the order of business.

The President stated that inasmuch as the members of the committee had probably reflected somewhat upon the business proper to be presented, he thought they would be better qualified to attend to the matter than a committee newly appointed.

The roll of the committee was then called, and it being ascertained that a majority of the committee were present, the President stated that, according to the usual course of proceeding, Dr. H. C. Kendrick, of Mississippi, would act as chairman.

Dr. Kendrick excused himself, and the subject of the appointment of a chairman was left to the committee itself.

The Minutes of the last session of the Convention were then read by the Secretary.

An inquiry was made of the Secretary, if the records did not attribute the invention of an instrument, to which reference was made, for producing local anæsthesia, to Dr. Putnam, of New York, instead of Dr. Branch, of Illinois, to whom it properly belonged.

While the Secretary was examining his minutes, the President said that he believed he could answer the question. When he introduced the matter to the Convention, he supposed the instrument was the invention of Dr. Putnam, and that he claimed it; but he had since ascertained that Dr. Branch was the inventor.

Dr. William H. Dwinelle of New York City, said this matter had become a part of history. Dr. Branch was the inventor, and had secured letters patent, and nobody else had any claim to the invention.

The Secretary then stated that the minutes did not give the name of Dr. Putnam as the inventor.

The President said that while the Business Committee were engaged, he would embrace the opportunity to state to the Convention that he had received a letter from Dr. J. M. Weiber of Paris, offering a new preparation of gold for filling teeth, which the writer believed preferable, on many accounts, to any other preparation heretofore used by the dental profession.

The letter was then read by the Secretary.

The President said it would be proper to state, that the box containing the gold and the tooth referred to in the letter, was opened at the Custom House, and the tooth lost—it never reached him.

Dr. Charles Bonsall of Cincinnati, moved the acceptance of the letter.

The President suggested its reference to a committee, with the gold accompanying it, that the latter might be fairly and thoroughly tested.

Dr. Isaiah Forbes, of St. Louis, moved that it be referred to the officers of the Convention.

Dr. Townsend said this motion would meet his views much better than the appointment of a committee. The organization of the Convention was decidedly a democratic one, and he feared, if they began by appointing a committee in this case, which would seem to warrant it, they would get themselves into a kind of trouble and take upon themselves responsibilities which they ought to escape, and which they did not wish to assume, and of which undue advantage would be taken by those who were always ready to hang to the back of anything they thought strong enough to carry them. They found last year, that gentlemen came to the Convention, got what knowledge they could, and then went home and made a card of it, publishing themselves as having been to the great National Convention, and saying they had learned wonderful things, which would be put to the advantage of their patients, and put into their own pockets afterward. He did not think the Convention was established for any such purpose. They wanted to obtain and give all the information they could, but they did not want to commit themselves, by the appointment of a committee, to the condemnation or approval of anything. The mere fact of the appointment of a committee would be enough, in some cases, to afford an opportunity for parties to go home and claim credit for themselves, on the ground that the Convention had considered their inventions of sufficient importance to appoint a committee to investigate them. He wished to avoid all such difficulties.

Dr. Dwinelle said they must be careful to avoid either extreme. He did not see how it was possible for a body like that to carry out its purpose without some machinery. It would be remembered he had previously deprecated encumbering the operations of the society with very much machinery; he wished to avoid that extreme, but still, he did not see how they could get along without committees. It was assuming that there was no necessity for system. There must be collateral matters going on at the same time with the business of the Convention, and he therefore favored the appointment of the committee.

Dr. Forbes said the letter was one written to the President of the Convention, in as respectful a manner as any letter could have been written, and it appeared on its face, that Dr. Weiber had an invention which he considered would be of advantage to the whole profession. The President had thought well enough of it to have it read to them, and he thought the greatest respect they could pay to the writer, as a scientific man, was to refer it to the officers of the Convention, as their most distinguished members.

Dr. Frank Fuller, of Portsmouth, N. H., suggested that a committee be appointed, to whom all matters of a similar character should be referred. He said that in this progressive age, they would be likely to have many such things presented for their attention, and he thought the appointment of such a committee would be a great saving of time.

Dr. G. O. Stearns, of Boston, expressed the opinion that the meeting was a Convention of the Dental Profession, not a Mutual Admiration Society. He hoped every thing would be done in an open, democratic manner.

Dr. Forbes said, his only object in making the motion was to get the subject out of the Convention at that time, in order that they might go on with their business.

Dr. Branch said he would second the motion. He thought the Convention would be safe in the hands of its officers.

Dr. John Allen, of New York, said he thought they were likely to get into difficulty. If this matter was referred to the officers, it virtually appointed them a committee. This was an important question, because it would establish a precedent on which they were to act hereafter. He thought it was not the object of the Convention to press any opinion upon such matters—to build up A, B, or C, or put him down at pleasure. If he understood the object of the Convention, it was to bring the whole into the great reservoir of useful knowledge. He thought a resolution ought to pass, to the effect, that they would not endorse any improvement brought before them; but that they would examine it, each man looking upon it with reference to its merit or demerit, but not that they were to endorse or reject it as a body.

Dr. W. W. Allport, of Chicago, called to order. He said the whole discussion was out of the prescribed order of business, and he would move to lay the whole subject on the table. The motion prevailed.

Prof. James Taylor, of Cincinnati, from the committee on that subject, reported the following as the order of business for the Convention :—

1st. President's Address; 2d. Election of Officers; 3d. Debate—"What are the best means for securing a healthy denture;" 4th. "What are the mechanical appliances necessary to secure the same;" 5th. On the "best manner of treating Alveola Abscess;" 6th. Discussion on Mechanical Dentistry; 7th. Discussion on filling teeth. Speeches to be limited to ten minutes, unless otherwise ordered.

The committee also offered the following resolution :—

Resolved, That all persons having mechanical means or appliances to present to the Convention, be requested not to bring them into the Convention, but deposit them in a separate room, for examination.

The report was accepted and adopted.

The President said—Gentlemen, the first business in order, according to the report of your committee, is an address from the President; but I have to throw myself upon your kind indulgence, as I have often before been compelled to do. I have no address to make. I would have prepared one, but the larger part of the time since the last meeting, my health has been such as to prevent me from writing, and it is only during the last six or eight weeks that I have been able to use my pen, and this I was prevented from doing by professional duties which had been before neglected. But I will take occasion, while up, to express the great gratification which it affords me in again having the opportunity of meeting with so large a number of my professional brethren. I am glad to see them here; I am glad that they feel so lively an interest in the advancement of dental science, as to put themselves to the trouble and subject themselves to the expense of coming from far distant and widely separated portions of the country, with the view of receiving information from their professional brethren, and interchanging views with each other upon professional subjects; and I am sure that every one will be amply compensated for this trouble and this expense in the accumulation of knowledge, for he will return from here with his hands and heart strengthened, to enter with renewed energy upon the arduous duties of his profession, and be better able to meet the wants of those who seek his aid. I have always been an advocate of dental associations. It has been said of dentists—and perhaps truly—that there was a feeling of rivalry existing among dentists which has heretofore prevented them from acting together, from associating with each other, from interchanging views, and this, no doubt, has retarded the progress of practical and scientific dentistry; but I believe that the time has well nigh arrived, when this feeling will be discountenanced and cease to exist; and I trust that harmony of feeling and brotherly love will characterize all the proceedings of this Convention, and that we may return to our several homes, having a higher opinion of each other than we have ever had before.

But I will not detain the Convention with any further desultory remarks of this kind.

[A gentleman in the hall made an inquiry with regard to the qualification requisite to become a member of the Convention. He did not know whether he could consider himself as such or not.]

Dr. Allport said, that in sending out the circulars, he had assumed a little prerogative. He ment by "practising dentists," to convey to those who received the circular, the idea that any one could become a member of the Convention who wished. He did not mean that every one could vote without complying with the requirements of the Constitution. It seemed to him proper that every member should sign the Constitution, and pay his proportion of the expenses.

Prof. Taylor, of Cincinnati, said that at their last meeting, this subject was thoroughly discussed, and he thought they did their best to make every dentist in the United States, Europe, Africa and Asia, understand that he was a member as soon as he came here; and that fact they published to the world. So far as signing the Constitution was concerned, he thought that was done simply to get the names of those present, and no man was compelled to pay one dime toward the expenses. They took it for granted, and he hoped they always would, that the body of dentists was ready and willing to meet all the expenses that might be incurred. (Applause.)

Dr. Townsend said, he perceived they wanted an open Convention—more open than it was. He would therefore move that they do away with the Constitution altogether, and invite every dentist, every where, to become a member.

Dr. Dwinelle seconded the motion, and hoped that it would include not only practising dentists, but all who had ever been practising dentists. If their excellent President should leave the profession to-morrow, he could not be a member of the Convention. Though a *practical,* he could not be considered a *practising* dentist.

Dr. Townsend said, he should like to see gentlemen connected with other scientific professions in the Convention. He had learned a great deal in reference to his own profession, from men who knew nothing at all about it. (Applause.) They had given him the results of their investigations, and he made an application of them which they did not dream of.

Dr. Spaulding, of St. Louis, said the suggestion met his hearty approval. He was glad that it had been offered, for it seemed to him difficult to fix the qualifications that should render a man a member of the Convention. He thought they should place it on the broad ground that any man who professed to be a dentist should be entitled to membership.

Dr. J. A. Perkins, of Rome, N. Y., stated that he had been a practising dentist, but was not now, and inquired if he could vote. The President replied that he could.

Dr. Townsend's motion was adopted, and Dr. T. then said, that this was what he aimed at two years ago, but to speak the whole truth about it, he was afraid to undertake to start the movement, without something that looked like a piece of red tape to tie up the members. He was afraid he could not get men to come to that platform without it; but he wrote the Constitution, so that it was bind and loose, bind and loose all the way through. It seemed, however, that it bound enough to make some cavil, and therefore he voted to throw it away.

The Convention then proceeded to the second item in the order of business, namely, "The Election of Officers."

Dr. F. H. Clarke, of New-York city, moved that the Convention proceed to ballot for President, the three gentlemen receiving the highest number of votes on the first ballot, to be considered the candidates, the lowest on the second ballot to be dropped, leaving only two names for the final ballot. The motion was adopted.

Drs. Allport and Roberts, were appointed tellers.

After the first ballot, Prof. Taylor, of Cincinnati, Drs.

Allport, of Chicago, Forbes, of St. Louis, and Townsend, of Philadelphia, were declared the candidates, the former two and the latter two having received tie votes.

Dr. Townsend stated that he should decline being considered a candidate, as he should not be able to attend the next Convention, as he expected to be in Europe at that time.

On the second ballot, Prof. Taylor, had 52 votes; Dr. Allport, 26; Dr. Townsend, 15; Dr. Forbes, 4.

On motion of Dr. Dwinelle, the election of Prof. James Taylor, of Cincinnati, as President of the Convention was made unanimous.

Dr. Bonsall, of Cincinnati, suggested that as they had taken a western man for President, they take an eastern man for Vice President.

Dr. Fuller, of Portsmouth, N. H., said it seemed to him highly proper and courteous that the two extremes of the country should be represented in the two highest officers of the Convention, and he would therefore nominate as a candidate for Vice President, Dr. Straw, of Bangor. He was one of the oldest members present.

On the first ballot, Dr. E. G. Tucker, of Boston, received 42 votes; Dr. John Allen, of New-York City, 29; and Dr. Straw, of Bangor, 18; and the two former gentlemen were declared the candidates.

While the committee were collecting the votes on the second ballot, Dr. Rogers, of Utica, N. Y., moved that when the Convention adjourned, it be to meet at four o'clock in the afternoon. Adopted.

On the final vote for Vice President, Dr. Tucker received 52 votes, and Dr. Allen, 34, and Dr. Tucker was declared elected.

On motion of Dr. Dwinelle, the election was made unanimous.

AFTERNOON SESSION.

The Convention was called to order at 4 o'clock, by the President.

The election of officers was proceeded with, Dr. J. R. McCurdy, being appointed on the committee, to collect and count votes, in place of Dr. Allport, resigned.

On the third ballot for Recording Secretary and Treasurer, Dr. L. W. Rogers, of Utica, N. Y., received 38 votes; Dr.

Spaulding of St. Louis, 31; and Dr. Rogers was declared elected, and the election made unanimous.

The Convention then proceeded to ballot for Corresponding Secretary, and on the third ballot, Dr. Isaiah Forbes, of St. Louis, was declared elected, he having received 47 votes, to 33 for Dr. Johnson, of Virginia.

Drs. Allport and Perrine were appointed by the President to conduct Prof. Taylor, President elect, to the chair.

Prof. Harris, on leaving the chair, said: I have to convey to the Convention my hearty thanks for their indulgence; and I am gratified that the Convention has made selection, for its presiding officer, of a gentleman with whom I have been acquainted for many years—from the very commencement of his professional career. Indeed, we started out from the same school; we had the same teacher; and although we have been somewhat widely separated from each other in the exercise of our professional duties, I believe we have always worked harmoniously together. (Applause.)

Dr. Allport then said, that in behalf of the President, and as a Western man, it gave him exceeding pleasure to introduce to the Convention the President, Prof. Taylor, of Cincinnati.

The President, on taking the chair, spoke as follows:

"Allow me, gentlemen, first to reciprocate the very kind feeling expressed by the gentleman who has just left the chair. He has alluded to the past—to a period of life when we were young in our profession, when, I was about to say, we scarcely had a profession. He has brought to mind those feelings and memories, which, in addition to the kindness you have this day manifested towards me, have indeed done more to throw me completely beyond the power of speech, than anything which he could have done. (Applause.) There are feelings striving for utterance, which language fails to embody in words; there are emotions gushing up from the deep fountains of my heart, which rush out with such force that I can not form them into proper words for this occasion.

"We have met gentlemen, for one very important purpose; may I not say for two very important purposes? First, we have met for the advancement of Dental science. We have met to investigate every truth on which that science is founded. We have met to see if those rocks of truth on which the foundation of our temple is now being erected are firmly cemented together. We have met, gentlemen, to com pare notes; we have met to exchange ideas with each other, and to refute or confirm opinions previously entertained. We have also met, may I not trust, to impart to those assembled with us here, useful knowledge; and may I not express the hope that every member of this Convention will be ready to impart all the information in his possession, that we may all be benefitted thereby.

"We have met also for one other important purpose. We have met to renew old acquaintances; to draw more closely those bonds which bind us to each other, and the profession we esteem. We have met to interchange not only our views, but our sympathies; and we have met also to gaze for the first time upon the faces of those whose works and writings have been speaking to us for years, but who now, for the first time, are brought within our cordial embrace. Who would not be here? Who would not lay aside the labor and toil of his profession to come to this eastern temple to usher in, as it were, a new science—the last mark of man's progress in dental and scientific knowledge? Who would not participate in such a noble work? Gentlemen, by your kind action in selecting me as your presiding officer; you have conferred upon me an honor that I know I can not merit, and I feel utterly inadequate at this time to the task imposed upon me; and did I not know that you are all animated by a thirst for knowledge which will lead you to set aside the formalities of parliamentary proceedings, I should shrink from the chair I now assume. I shall, therefore, ask your kind indulgence and hearty co-operation, in order that our deliberations may be such, that this new science, if I may so call it, may continue to advance from one step to another until it ranks with that ancient and time-honored profession which we all revere and respect." (Applause.)

Dr. Perine then offered the following resolution, which was adopted, the Convention unanimously rising:

Resolved, That the thanks of this Convention be tendered to Prof. Harris for the very impartial manner in which he has presided over its deliberations.

A vote of thanks was also passed, on motion of Dr. Allen, of New York, to the other retiring officers, for the faithful manner in which they had discharged their duties.

Prof. Harris them moved the appointment of a committee of five, to examine the gold sent to him by Dr. Weiber, of Paris, the letter accompanying which was read in the morning. He said it was possible the gold might possess valuable qualities, if so, the profession should know it, and make a suitable acknowledgment of its receipt.

Dr. Spaulding suggested that the committee be made a standing committee, to whom should be referred all similar matters during the session."

Prof. Harris said he should have no objection.

Dr. Townsend expressed the opinion that this should be a special committee. It had come to them in a little different manner from anything else they were likely to have, and he hoped it would be referred to a special committee.

The committee was then ordered to consist of five, which the chair appointed, as follows: Drs. Dwinelle, of New York; Allport, of Chicago; Townsend, of Philadelphia; Taft, of Cincinnati; Tucker, of Boston.

On motion of Dr. Lord, of New York, the committee were requested to report during this session of the Convention.

Dr. Fuller, of Portsmouth, N. H., offered the following resolution:

Resolved, That all members of the medical profession, chemists, metallurgists be, and the same hereby are, cordially invited to attend the meetings, and take part, if they please, in the deliberations of this Convention.

This resolution called forth some little debate, and was finally amended by striking out all after the word "meeting," in which shape it was adopted,

Dr. Bonsall, of Cincinnati, moved that the Convention adjourn to meet to-morrow morning at 10 o'clock.

A motion to substitute 9 for 10 o'clock was adopted, and the Convention adjourned.

SECOND DAY—FORENOON SESSION.

The Convention was called to order on Wednesday morning, at twenty minutes past 9 o'clock.

A brief discussion took place on the subject of finances, which terminated by the appointment of Drs. Allport, of Chicago, and Miller, of Worcester, a committee to take the names of members and collect funds.

The Convention then took up the first question for debate: "*What are the best means for securing a healthy denture?*"

Some hesitation being manifested in opening the debate, the President called on Prof. Harris to present his views to the Convention; but that gentleman declined, stating, however, that at a later stage of the debate, he might have something to say.

Dr. Baker, of New Hampshire, read a communication published by him in the Portsmouth (N. H.) *Journal*, on the effects of saleratus, cream of tartar, and carbonate of soda, on the teeth. He regarded the use of alkalies in the making of bread as highly injurious, and looked upon them as a principal cause, (though not as the only cause,) of diseased teeth. In answer to an enquiry, Dr. Baker said he thought these substances effected the enamel of the teeth, but not so much as the softer bone.

Dr. Spaulding, of St. Louis, confessed that the assertion that alkalies were injurious to the teeth was a new idea to him; and, in connection with this matter the question arose—Is saleratus a pure alkali? It was well known that saleratus was carbonate of potash, that carbonic acid gas enters largely into its composition. The question was, then, is its action purely that of an alkali? In laying down principles, they must be sure they were strictly correct.

Dr. Kendrick of Mississippi, inquired through what medium the alkali affected the teeth.

Dr. Baker—Through the medium of the food with which it was mixed.

Dr. Kendrick—Why don't it affect all teeth alike?

Dr. Baker—Some eat more than others.

Dr. Kendrick said that was true. He regarded this subject as a most important one, because it aimed at preventing the trouble they were all united in trying to correct. They were often pained by having children brought to them of eight or ten years old, to have permanent molars taken out, whose parents were perfectly thunderstruck when told that they were the permanent teeth; they had supposed they were the temporary organs, and had been careless of them. He thought the cause of decay was the accumulation of extraneous matter about the teeth, whether of animal or vegetable food; and if he were to answer in a single word the question, "What are the best means of securing a healthy denture," he would say—CLEANLINESS. (Applause.)

Dr. Perine said this was a very important subject, and he was glad it had been brought before the Convention. He had come there, with other younger members of the profession, to learn, and he would be glad to hear from Prof. Harris on this subject.

Prof. Harris said, if he had consulted his own feelings, he would have preferred to remain a listener; but, at the request of several of his professional brethren, he rose to say a few words upon the subject. He could very well conceive that bread, having in its composition saleratus and cream of tartar, if it affected the general health, might indirectly affect the teeth prejudicially; but that they had any direct action upon them, he could not for a moment conceive; for the reason that the alkaline properties of the saleratus were neutralized by the cream of tartar. That caries of the teeth is the result of the direct action of alkalies, is refuted by the fact that the animal frame-work remains, and even with exalted sensibility, long after the destruction of the earthy salts of the affected parts. But so far as particular kinds of diet and modes of living were capable of affecting the general health, so far the liability of the teeth to decay might be increased. He was of opinion that if every individual came up to a perfect standard of health, caries of the teeth would very rarely, if ever, occur, for the reason that they would be capable of resisting the action of those chemical agents, to the presence of which, caries of the teeth was now universally admitted to be attributable, more especially if the ordinary means of cleanliness were resorted to. He agreed with his friend, Dr. Kendrick, that cleanliness was the all-important thing for the preservation of the teeth; but some teeth were so susceptible to the action of chemical agents, so imperfect in their physical condition that they were very easily assailed. For instance, teeth that were of a very soft texture, they found deep indentations in the grinding surfaces, sometimes absolute imperfections of the enamel, through which the chemical agents of the mouth, whether existing in the fluids of this cavity, or the result of some change which takes place in the remains of alimentary substances lodged in these indentations or between the teeth, are introduced. Teeth of this description decay easily and rapidly. Again, they oftentimes meet with instances of caries, or érosion, if they pleased to call it such, immediately after the eruption of the teeth from the gums, showing that it was to the action of the fluid contained in the sacks of the teeth, and that, too, after they had become completely enamelled, that decomposition was attributable. An example of this kind occurred to him now, which ran through a whole family in Baltimore, and seemed to be dependent upon some peculiar constitutional idiosyncracy. In almost every member of that family, the teeth, the molars particularly, were found to be more or less eroded immediately on their eruption from the gums, and before they were brought in contact with any agents from without. The fluids of these sacks were undoubtedly acidulated, and this acidulation depended upon some peculiar cachectic habit of body of the various members of the family to which he referred. He could call up a hundred examples of this kind, but one would suffice.

Again; they found a somewhat analogous process occurring in the destruction of the roots of the temporary teeth. This had usually been attributed to the action of the absorbents, but experiments had shown that the extraneous substance which is brought in contact with them, before the destructive process commences, exhales an acidulated fluid, which has a stronger affinity for the lime of the teeth than the phosphoric with which it is combined; and it was usually regarded as unphilosophical to attribute to two causes an effect when one alone was sufficient for its explanation; and in this instance he supposed that the acid exhaled or thrown out from this extraneous body, coming in contact with the roots of the temporary teeth, as the chief agent in breaking down the calcareous material; then the absorbents might come forward, take up the residuum, and carry it back into the general circulating system. He could not conceive that vessels so minute and delicate as the absorbents, were capable of rasping down a substance as hard and resisting as the roots of the teeth.

Dr. Clark, of New York, requested Prof. Harris to touch upon the fact, that in many mouths the caries commences at the exact edge of the gum. It seemed to him that the cause might be found in the secretions of that particular part of the mouth.

Prof. Harris said that was undoubtedly the explanation. The suggestion just made went most strongly to establish the correctness of the views he had advanced; for where the mucous secretions of the mouth were first brought in contact with the teeth, and especially where they were longest retained, was the spot where they most frequently discovered the first evidence of their destructive ravages. This is especially the case upon soft teeth—teeth easily acted upon by chemical agents. He was aware that a variety of theories had been propounded with regard to the cause of caries of the teeth, but in his opinion, it was the result of the chemical decomposition of the earthy salts of the affected part, sometimes accompanied, but more frequently followed by the disorganization of the animal frame-work of the afflicted portion of the tooth.

The question was often asked, "why are seafaring men, and persons residing near the sea-shore, more subject to caries of the teeth than persons residing in the interior of the country?" He had often remarked the fact, and he had often heard officers of the navy say, that since they had been almost constantly on the water, their teeth had decayed much more rapidly than before. He had been unable to offer any explanation, but two or three years ago, while at Cape May, he observed, after he had been there two or three days, that the locks of his trunks were very singularly affected, having turned green. It seemed to him that this must be attributable to some atmospheric influence—to some acid, perhaps; but where did the acid come from? It is well known that the ocean contains salt—a muriate or hydrochlorate of soda. Was it not possible that the evaporation going on continually on the surface of the ocean might set free, to some extent, hydro-chloric acid, which, by diffusing itself abroad in the atmosphere, is brought in contact with the teeth at each inspiration; and might not this act prejudicially upon these organs? And was it not to the presence of this acid that the change to which he had referred was attributable? This seemed to him a very plausible and rational explanation.

Dr. Dillingham, of Boston, said he had lived for some years in the vicinity of salt water, and he had frequently noticed the decayed condition of the teeth of seafaring men. On one occasion, while practising at Edgartown, a gentleman called on him to have his teeth examined before going on a whaling voyage. He had never seen a more perfect set of teeth than that man possessed. He requested him to call and see him on his return, and some three years afterwards he did so. Five of his teeth had entirely decayed, leaving nothing but the roots, and there were some six or seven that needed to be plugged. He had endeavored to ascertain the cause of this, but had as yet arrived at no definite conclusion. He thought it might be referable to the use of salt provisions, and the vinegar and limes which were used so freely by seamen to prevent scurvy.

Dr. Baker said there was probably no man in the country who had received greater benefit from the writings of Prof. Harris, or who entertained for him a more profound respect than himself; but on the question of the influence of alkalies on the teeth, he could not agree with him. He thought the absence of cleanliness in the case of sailors was a great cause of the decay of their teeth. It had been said that in the preparation of bread, the acids and alkalies neutralized each other; that was true, but they destroyed the goodness of the wheat, and might, in this way, act upon the teeth.

Dr. Branch, of Illinois, said that he thought there were few who would maintain that alkalies moderately applied to the teeth, would be productive of injury. He should look further than that for the cause—in the constitutional effect. If there was an excess of alkali, as there often was, in the bread we use, that being taken into the stomach, excited that organ to throw off an extra quantity of acid. If they attempt to overpower nature in any direction, she would resist and perhaps overact in an opposite direction. Thus it was that by taking alkalies into the stomach, we excite the production of acid in the system, and the vessels are excited to an extent that becomes injurious; the acid thus produced acting prejudicially on the teeth. Thus the alkali taken into the stomach affects the teeth, not directly, but indirectly. The great secret of a healthy denture was a healthy constitution. Give him a constitution able to appropriate, as a healthy constitution is able, all substances taken into the stomach to the building up of the system, and he would show them a healthy denture. It was sometimes asked what food was best calculated to produce a healthy denture, and that was very proper with respect to a diseased subject; but he maintained that it was little matter what food a person ate, so that it contained any proper nutriment for the body, if he had a healthy constitution, to assimilate the food to the building up of the system. Their attention, as dentists, in this matter, should be directed to those things which were calculated to give their patients, whether young or old, a healthy constitution. He should answer the question, "How shall we produce a healthy denture?" in one word—"produce a healthy constitution."

Dr. Reed, of Newport, N. H., said he had been instructed and edified by the remarks of the speakers who had preceded him. It had been correctly stated, in his opinion, that a person having a healthy constitution would have a healthy denture; but their patients were thrown upon their hands with an unhealthy constitution, and he wished to know the best means at their command, for securing a healthy denture to those persons, notwithstanding the unhealthy constitution with which they found them. They had young patients brought to them daily, even infants in their mother's arms, to know what should be done to secure for them good teeth. He believed that acid was the great enemy they had to combat, and therefore he had uniformly directed the use of a mild alkali, to neutralize not only the acids of the fluids of the mouth, but the acids which are produced by the fermentation of the foreign substances which may be lodged between the teeth, in cavities, and beneath the gum, especially upon the buccal muscles, where there was no action of the tongue to remove them. He recommended his patients to use a little nice soap, and cleanse the mouth thoroughly.

Dr. Clark, of New York, said this was a subject of extreme interest to him; and he wished to say a few words, that might call forth remarks from others more capable of elucidating the subject than himself. He felt convinced that the cause of decay upon the surface of the teeth, on the line of the gum, and particularly on the outside of the gum, could not possibly be owing to any secretions there, for the reason that he had cases in his own family, where these places had been cleansed often, and it had been found almost impossible to prevent decay there; and this, too, when all the other teeth, even where they were crowded, and it was impossible to clean them, had manifested no signs of decay. He was of opinion that the cause of decay there was different from that which produced decay in the grinding surfaces of the molar teeth, and he hoped this discussion would be protracted, that they might have the views of other members of the profession upon the subject. The case seemed to him analogous to the decay of many vegetable substances, to the decay of posts in the ground, and the decay of vessels, where there was an alternate exposure to atmospheric influences and to moisture. It seemed to him that there must be an acid generated at the edge of the gum, peculiar to the place, which, at the moment of its production, acts directly upon the teeth. There were many cases that came to the knowledge of every dentist, where they found that those surfaces were polished, and polished, until they were polished through, but still the same action was manifest upon the enamel, and he believed it was almost exclusively confined to the enamel.

Dr. Allen, of New York, said the great object of the Convention was to arrive at facts, and see if they could not do more good in their profession. This was what their patrons and the community demanded of them ; and he believed they had at length struck at the root, the very starting point of improvement. As to the cause of decay, they had been told that if they had a healthy constitution, they would have sound and healthy teeth. He subscribed to that; but here was the question—"How should they secure that healthy constitution ?"

Dr. Branch (interrupting) said that in the remarks he had made, he meant to be understood, that in order to produce a healthy constitution, or to make a diseased constitution healthy, they should study constantly to keep up the balance of the system, by exciting alternately the production of acid and alkali. It was no use to undertake to subdue acids in the system by putting alkalies into the mouth.

Dr. Allen said that was the point he was attempting to reach. It was their duty, as he conceived, to pay most especial attention to those causes which would produce the breaking down of a good constitution. They had been told that it mattered little what they ate; provided they could maintain this balance; and the proviso was well thrown in. In the West, where there were a great many distilleries, cattle and hogs were fed on distillery "slops" to a great extent. If a cow, that had been raised on grass, was fed ten years on "slops," her teeth would become so affected that she could not maintain life by eating grass. If the animal economy was thus affected in the case of the cow by her food, why not look at their own systems and see whether they were not affected in the same way—whether the same law does not govern us as the cow or the hog. He took the ground that caries of the teeth was the effect of chemical action, produced by the superabundance of acids or alkalies, the one affecting the limy portions, the other the gelatine portions of the teeth. The point was to discover what kinds of food will produce the most healthy condition of the system. He thought that if they were to live on a more simple diet, if they had less to do with acids and alkalies, they might look for better teeth. He thought there was a law in the animal economy that would teach them a good lesson.

Dr. Sylvester; of New York State, referred to a case cited by Dr. Baker in the article read by him, of several students, who had been very seriously affected by the bread they ate, which was mixed with saleratus. He said he knew something in relation to that matter, and that it was not the saleratus alone which had produced the effects spoken of. The boarding-house where the students lived was a cheap one, where the object was to procure the greatest amount of nutriment for the least amount of money. A great portion of their food consisted of gingerbread, sweetened with cheap molasses. It was the sweet and the saleratus, occasioning a disordered stomach, that produced the disease, not the saleratus alone.

He was glad to hear the question brought up with reference to the decay of the teeth of seamen, but he thought they must look for the solution of the cause in another direction from that mentioned by Prof. Harris. He thought he could make this evident by one simple statement of fact. Some years since, having his attention turned to the effect of diet upon the teeth, he determined to make an examination into the condition of the teeth of the aborigines of our country, and accordingly visited the sea coast near the city of Darien, Ga., and spent a day in exhuming the remains which had been there thousands of years, for all he knew, and collected a bushel of teeth, among which he found only one case of disease, which resulted not from caries, but from the wearing down of the tooth until it reached the pulp cavity. Those aborigines lived right on the sea coast; the mounds from which the teeth were taken were not more than half a mile from the sea; so that he thought, if it should prove a fact, that people living on or near the salt water, are more subject to caries of the teeth than people living inland, they must look for the cause in another direction than the influence of salt air upon them. It seemed to him that they might go back even further than the preceding speakers had gone in seeking to account for this fact. It was important for them to tell those who were becoming mothers, that even before birth, the teeth in embryo exist in the infant, and that causes which influence their formation at that time may have their effect years afterwards. How was it with our ladies? With compressed systems we have a compressed alveolar ridge. If they would effect a change in this matter, they must go back to the primary cause, and ask the women of the country to dress and live according to nature, and then, when their children died, their teeth would be like those of the aborigines of the country, and our profession useless. The manner of living affected the teeth gradually. He had noticed that persons coming to this country from England, with perfectly sound teeth, after living here a few years, found their teeth begin to decay. That it was not the climate, was proved by the fact that the aborigines had sound teeth; it was their mode of living—their hot food and saleratus.

Dr. Dwinelle said he thought he could answer the question now under consideration in one word—*cleanliness*—positive and absolute CLEANLINESS; studying the necessities of the constitution, and contributing to them in such a manner, that a healthy condition of the secretions of the system will be secured. It was well known that their constitutions were continually changing more or less, from one extreme to the other. They had only to study these changes, and consider that they were, in fact, chemical laboratories, containing every element within themselves that was embraced in the universe, and they had only to use their common sense, and study to regulate things correctly. It seemed to him that nothing was more true than that the decay of the teeth came purely from chemical action, and was owing to an excess of acid or alkali in the system, the acid acting upon the lime, the alkali upon the gelatine. They had only to go into a chemical analysis of their teeth and bones, to ascertain where the trouble lay. He presumed there was not an individual present, who had not prescribed alkalies, under some modification, to his female patients. He knew that the teeth of females, during the period of gestation, decay more rapidly than at any other period of their lives; they must correct this. He did not think that saleratus decayed teeth. They were continually taking substances into their mouths, which, if used exclusively, would destroy the teeth. Dr. Westcott had been over this entire field, and proved to a demonstration, just what effect such individual substance had upon the dentition. It seemed to him that cleanliness, and a careful attention to the idiosyncracies of the individual constitution—because what was applicable to one individual, was not applicable to another—were the great requisites for securing a healthy denture.

Before sitting down, Dr. D. said, he desired to refer to the remarks made by his friend, Dr. Sylvester. His intimation was, that the aborigines were not afflicted with decayed teeth. It was the general and popular opinion that we were a degenerate race. He begged leave to differ; we were a changing race, but he believed not a degenerate race. He believed we had as good specimens of men, physically, in these latter days, as ever were known in the days of Moses or Noah. His observation differed materially from that of Dr. Sylvester. He happened to be born—accidentally and without consultation (laughter)—in the upper part of New York State, where many Indians were buried. He had not dug up Indians by the hundred, nor gathered teeth by the bushel, but he had desecrated fifty graves, perhaps, and in his perambulations, he had found a great many decayed teeth. He did not know but his predecessors then might have used an excess of saleratus, (laughter) but he only spoke of the fact. He had also in his possession the tooth of an Egyptian mummy, which was very badly decayed, and showed plainly that it troubled its owner,—who might have been cotemporary with Noah or Moses himself,—with the toothache. We had, too, he believed, an unquestionable specimen of Egyptian dentistry—the tooth of an Egyptian had been found filled. He did not believe, therefore, that we were a degenerate race. In fact, he was not prepared to say that the toothache was not among Job's afflictions.

Dr. Palmer, of Poughkeepsie, was not prepared to deny that the use of saleratus was one of the causes of the decay of teeth, but he believed the causes were multitudinous. He could not altogether agree with the preceding speaker, in the opinion that the teeth of the present generation were as good as those of the preceding. He thought the matter of diet, was one that called for their consideration. The question under discussion opened a wide field, and he thought a powerful influence might be exerted upon the community by the discussion there, and much good be the result.

Dr. Priest, of Utica, thought dentists were disposed to ride hobbies. There was no single cause of the decay of teeth. He was often asked, "Is it candy?—is it pickles?—is it sugar?" He had only time to answer, there is no special cause, but a general cause. This cause reached as far back as the influence of the mother. Our children come to us with decayed teeth almost from their birth. It seemed to him, that they should go back to first principles in this matter, and not attempt to refer it to eating any particular kind of food, but strive to get at the principle that underlies the constitution of the patient.

Dr. Frank Fuller, of Portsmouth, N. H., thought it was about time that the old humbug of the injurious effects of soda and saleratus was exploded. That theory was every now and then broached, notwithstanding the assertion of Dr. Harris, in his "Principles and Practice," and in dental publications, that the destruction of the teeth was certainly caused by acids, and not by alkalies, which could not possibly affect phosphate of lime, upon which their strength, although not their vitality depends. Did mild alkalies, such as soda, or saleratus, placed in contact with the teeth, injure them? He would admit, that if they were macerated in a strong solution, it would soften the enamel; but who did this? Did any body keep saleratus or cream of tarter, in this form constantly, or for any number of hours, in contact with the teeth? Certainly not. They were used simply to make bread, and other articles composed of the various serials. Cream of tartar was mixed with saleratus, carbonic acid gas was generated, and this was stirred up in the bread. In the process of baking, the carbonic acid gas was thrown off, leaving simply a small proportion of Rochelle salt. Did that injure the alimentary passages, or the digestion, in the small proportion in which it was used—the thirtieth part of a grain, perhaps? By no means. Rochelle salt, as they well knew, was often recommended as a slight laxative, and in his opinion, it would be one of the best ingredients to mix with bread. The tendency of bread was to constipation. If a dog lived on it thirty days he would die; there was no action of the bowels. He held that saleratus and soda did no injury to the teeth. He was very glad, when one of the preceding speakers stated, that he was in attendance on one of the students, referred to in Dr. Baker's article, who partook of the "specific gravity pudding," because it assured them, that the last stone on which that article was founded, had fallen. It was plain, that it was not simply the saleratus that occasioned the sickness and death, but the cheap living, which degenerated the whole system—their cheap molasses in the gingerbread, which generated acetic acid by acetic fermentation. It was his opinion, and one which he believed would be sustained by ninety-nine out of a hundred of the audience, that the great cause of the destruction of the dental organs was acid, mineral or vegetable. Cleanliness was, indeed, a thing that they should always recommend; but this would not always save the teeth. Some teeth were so imperfect in construction, had so little earthy material, that they were acted upon more easily than others. He had often seen young ladies and gentlemen, from ten to fifteen years old, with their superior incisors almost destroyed. Cleanliness would not remedy this evil. It would do much, but the theory should be generally understood, and he hoped that the Convention would set the matter at rest—that acids act upon phosphate of lime, but that alkalies do not, and that if we keep the teeth free from acids, and from extraneous substances, by a careful attention to cleanliness, we do all we can, in the first instance, toward securing sound and healthy teeth. In conclusion, Dr. Fuller said, he desired to call upon his friend, Dr. Severance of Great Falls, to explain to the Convention a new theory he had adopted, which he (Dr. F.) denominated "Dental Gymnastics."

Dr. Severance said his idea was simply, that the teeth, like the other organs, required exercise for their developement and strength. This should be secured by a proper attention to the food, care being taken to provide such as would, in the process of mastication, afford sufficient exercise for these organs.

Dr. Townsend had been very glad to hear the discussion, but he thought they did not go far enough back. Theories were very important, for there could be no correct practice without an approximation, at least, to a correct theory. He thought they could not reach the root of the difficulty unless they could go as far back as the King of Prussia did, who passed an edict that such and such persons in his realm should not marry nor cohabit. Two persons whose constitutions could not assimilate, had no right ever to come together. He believed that feebleness of constitution produced feebleness of teeth. It was sometimes said that, in a few years, dentists would not be needed, as people were taking care of their teeth. The youngest member of the profession need have no fear on that ground. As long as persons come together, merely from a fancy for the persons there would be work enough for dentists. How were they in any manner to remedy the evil? They all knew, that in the flour they used, the hull was taken out, and only the starch—he might almost call it—left. It was the outer crust of the wheat or corn that was intended to produce bone, and that had been taken off. The consequence was, that they had less bone, and the bones were not of solid texture. He had often been consulted by ladies, with regard to the decayed teeth of their children, two or three years old, and he had sometimes said to them—what might almost seem impudent, but he did not mean it so, and they understood it—that they had not made their children well. He believed, from an experience of twenty-five years, that the main cause of decay was to be found in the formation of the teeth. They all knew that it was just at the folds of the enamel that the decay commenced in molar teeth, and that it was in the interstices between the teeth, at the margin of the gum, and perhaps a little beneath, that caries commence in the incisors, cuspids, and bicuspids. Wherever there was a bad formation, and a want of cleanliness, they had this result—the chemical decomposition from the acidified food, and from the acids of the fluids of the mouth, became concentrated at these points, where the extraneous substances could not be removed. Here, it seemed to him, was the true cause of caries. Where they found a perfectly developed body, they would find, in a majority of cases, a perfectly formed set of teeth. This perfectness of formation, as it gave to the body grace, strength, agility, power, gave in the same way, tone, strength, smoothness, and capability of endurance to the teeth. The first difficulty he had mentioned, could not be reached; they could not prevent men and women from marrying and having children whose constitutions were not adapted to each other, and they must do the best they could to arrest the evil after it was formed. He wished the profession to discover some method of prevention of the injury by acid fermentation, even in the worst formed mouth. If they could so arrange the diet of their patients, that it should contain just the proper amount of alkalies, and tend to produce a perfect dentition, they would perform one of the greatest services to the community that any set of educated and scientific men could possibly do. He hoped to live to see the day when this should be accomplished. He trusted that many of the young men who graduated at our colleges, would turn their attention to what he might call chemical dentistry; for many of them were apt to take hold of manipulation, and become indifferent to everything else. He did not want them to be satisfied with routine work, when they ought to go forward.

Dr. Stackpole, of Dover, N. H., said he thought they would all agree that it was as impossible to lay down any specific, special rules in dentistry, as in the treatment of disease. Good, common sense was the great thing to be exercised every where; they must take things as they were. He knew they could go very far back, and see very remote causes, but it was not always that they could give advice. If a lady, in the bloom of youth, came into his office, and he saw that her teeth were imperfect, it would be a very delicate matter to say to her that she ought not to be married, or to tell her lover that he would commit a great wrong by making her his wife, because, if they had offspring, they would have bad teeth. They had, therefore, to take things as they were, and so far as they could give advice on general principles, so far they would do good. His advice would be of a general character; take care of the general health, live in accordance with the laws of nature, (so far as they can be ascertained,) and seek to develop the system in all its parts, then the teeth will be developed perfectly. He had no theory to establish or overthrow about acids or alkalies, but if they saw any error in the system, if they saw anything in the laboratory indicating too much acid, or too much alkali, let them, as far as possible, correct it, and they would improve the general health, and that would have a tendency to promote a healthy condition of the teeth.

Dr. Waters, of Waterville, Maine, expressed his concurrence in the general views presented by Dr. Townsend, but not altogether. He had told them that bread was made out of a substance from which the bony material had been thrown aside. There were two substances found in man in greater proportion than any other—he referred to phosphoric acid and lime. Bone material must have phosphoric acid in order to be bone; the germ of the wheat, he apprehended, contained that phosphoric acid more than the hull. He did not know that this was so, but he had theorized himself up to this point. He conceived that we existed before there was any action of the stomach, and before the stomach was formed, and that the nervous organization was the first that had any partial completion, and that it must have a completion in the germ before any other part of the organism could be elaborated. That was his theory, and he wished those persons who had a deep insight into theorizing would take this matter up. Could nervous matter be generated without the presence of phosphoric acid? Did not that acid, in its combination with certain other acids, always manifest itself in nervous action?

In order to get at this, it would be necessary to understand, what was generally conceded by physicians, that when a person undergoes extreme nervous agitatation, from whatever cause, phosphate of magnesia is the result; and if this is not carried off through the urine, the patient suffers from neuralgia.

At this point, Dr. Waters gave way for a report from the Business Committee, who recommended that the discussion on the subject under consideration, terminate at half-past twelve o'clock, (in five minutes,) and that the remainder of the forenoon be devoted to the subject of filling teeth, and the afternoon session to a discussion on the best method of treating alveolar abscess.

Without taking the question on the report, the Convention voted to lay the question under debate on the table, with the understanding that it should be resumed at a future time, and took up the subject of filling teeth.

Dr. J. A. Cummings, of Boston, here announced that the Dentists of Boston had made arrangements to invite their friends from abroad to an excursion down the harbor, and wished them to hold themselves in readiness at 2 o'clock on Thursday afternoon. [Applause.]

DISCUSSION ON THE BEST MODE OF FILLING TEETH.

Dr. Taft, of Cincinnati, suggested, that in the discussion of the subject now before the meeting, each person should select such a case as they might choose, and describe their method of operating throughout. This method would bring out many things that in a more general discussion would be overlooked.

The suggestion of Dr. Taft was agreed to.

Dr. A. Blakesley, of Utica, N. Y., commenced the discussion. He selected as his case for illustration, the approximal cavity of an incisor. He commenced by examining the cavity carefully, and then removed, as neatly and thoroughly as possible, the decayed portions. His next object was to form the cavity; and in doing this, he used instruments peculiar, perhaps to himself, principally the old-fashioned English broach, in little handles, with the ends made a cutting point, in the form of a chisel. After he had formed an angle, say of eight or ten degrees, and a little dowel-shaped point on the upper and lower surfaces, and on the side at the base, he formed a little groove from one point to the other. Then carefully running along under the front surface of the enamel, he formed a little depression, in a rounding manner, until he approached the lower or cutting edge of the tooth. When they reached that point, they will generally find that they could make another little dowel-shaped point there. Then he directed his attention to the labial surface of the tooth. In many cases, the enamel was broken away, and the tooth so far decayed that he could not form a groove or point anywhere, and then he had to depend upon the base he made where he commenced, and in the end of the tooth where he terminated. Something might be gained by a groove from point to point in the labial surface, from end to end.

Having described his method of preparing the tooth for filling, somewhat more at length, Dr. B. then gave a very interesting description of the course he took in filling the cavity, by the aid of diagrams on the blackboard, but the description can hardly be made intelligible in print. (This remark will hold good with regard to all the subsequent speakers on this subject.) Dr. B. said that within the last few months he had changed his whole mode of operating, except in his manner of preparing the teeth before filling. He had been led to do so by a series of experiments in the use of a new foil, which superceded any he had previously used. In his former method of operating, there was always a feverish uncertainty; but now, with the gold he used, and his instruments, which were sharp points, he thought he knew that every point was filled hard enough, so that if any accident happened to the tooth, and any part of the filling was lost, the whole was lost; it did not come out in particles at all. In operating upon front teeth, which had given him more satisfaction than anything else, he restored the shape of every tooth as he went along. The gold he used being chemically pure, was, at his own suggestion, prepared by A. J. Watts & Co., at Utica, and was identical with the "Crystal Gold Foil," prepared by them now, which he obtained fresh, and was not, therefore, subject to the same embarrassment under which others labored who obtained their gold from a distance. He took a sheet of No. 5 of this gold, and, with his hands very dry, rolled it into what might be called a rope, and then cut it into pieces as nearly square as he could. Then he took another sheet, which he cut through the centre, and made it into folds, and so with a third, the folds being made into lengths according to the size of the cavity, longitudinally, and quite small. It had taken him as much labor and care to learn how to use the Welding-gold successfully, as it did to learn how to use gold at all in the first place. The instruments he used were very simple, and much reduced in size—three or four summing up the whole in his ordinary operations. The smallest was perhaps the size of a medium-sized pin, the end cut into three delicate points. The largest was about the size of a common knitting needle, and in that he made four points, not too deep. Then he had another instrument about half way between these two. With the middle-sized instrument he commenced setting up the pellets of gold on the sides, until he got to the very centre of the tooth, and until he felt sure that he had introduced enough to fill the tooth from side to side. He did not give much pressure at the commencement; but when the tooth was filled, he pressed the gold partly sideways and partly by moving the hand back and forth, until it grew harder and harder. It was sometimes said that cohesive gold hardens too quick, but it was not so with him; this he avoided, either by not attempting to harden it when he put in the pieces, or by pressing it lightly and carefully until he had compressed it solid; then, with a finer instrument, shaped so that he could pass it between the walls of the cavity and the portion of the filling he had placed there, he endeavored to free it slightly from the wall. If he found he could do this, he took a smaller pellet, and placed it in this little artificial cavity, and pressed it slowly along until he found he had got nearly to the bottom of the cavity, and then he gave it a hearty push until it was filled up hard. Then he proceeded to the other side, and by the time he had done that, this portion of the cavity was filled, to all intents and purposes, and lay without any motion at all; and thus he was relieved from all uncertainty with regard to the success of the operation. Then he commenced with the other pellets, and filled up from side to side, until he had perhaps two-thirds of the whole length of his cavity, when he took an instrument a little straighter, with a depression in the edge, to hold the pellet, which he inserted at that point, where, from the shape of the instrument, he was able to weld it perfectly, and then he went and filled up his cavity flush with the common surface of the tooth. Then he commenced carefully to restore the shape of the tooth, and finished it up by polishing in any way he pleased. He had never lost a filling inserted in this way, and he was thus relieved from the uncertainty with which he was troubled in years gone by. His patients often said to him—"My dear sir, my teeth look better, you have restored their shape; I am delighted." He supposed they were, and he was himself, so they enjoyed it together. He thought the difficulty that was found in using the cohesive welding gold was owing to the fact that it was used in too large quantities, with too large instruments, and the pressure applied too soon. He regarded this gold as very valuable to the profession, as it would enable them to operate in many cases which could not be reached by using unadhesive gold.

In conclusion, Dr. B. said he had never expected to see such a body of men as had met there, gathered together to advance the science of dentistry; he could not express his feeling. There was a time when he had not felt proud of his profession; but now he did. (Applause) He expected to meet with them as long as he had strength to do so.

Dr. Hawes, of New York, inquired how Dr. Blakesley kept the tooth he was filling dry.

Dr. Blakesley replied that he had accomplished this by using napkins of all sizes, and bibulous paper, which he inserted on the point of his instrument, changing them often.

Dr. E. J. Dunning, of New York, was then called upon and came forward. He said he was not accustomed to describe his operations, but be should be happy to give the Convention any information in his power with regard to his method of operating, if he had anything that was peculiar to himself, which he did not know that he had. He would take, as an illustration, a case which he regarded as the most difficult they had to meet, and one in which there was the most failures, namely, the approximal cavities of a bicuspid tooth. They presented great difficulties owing to the breadth of the surfaces.

Dr. Perkins, of Milwaukee, suggested that Dr. Dunning should take for his example, the second lower molar, posterior surface, to which Dr. D. assented. He said the main difference in the treatment of this case, would be the various methods that would be used to prevent the overflow of the saliva of the lower jaw. And here he would venture one general remark, which seemed very appropriate at this point, and that was, that skill in performing these operations consists more in the preparations that make the work easy, than in the work itself. It would be impossible to fill the cavities of the posterior surfaces of molor teeth, unless the operator could see pretty well; to fill them by the reverse action of mirrors, would be difficult, at least he did not undertake it. In the case referred to he should consider it necessary to carve the surface of the tooth, if it was a case where he thought it best to cut the surface at all, with such an inclination that he could get the light upon it. Forming the cavity was a simple matter of using instruments turned at different angles—simple variations of the angle, or the inside of the cutting instruments. He used the hoe-cutting instrument of different lengths and angles. There were cases where it was necessary to leave one wall of the cavity without an edge; but he had always been careful, and nervously so, about making sure every side of the cavity, if possible. He considered one of the greatest advantages of crystaline gold to consist in this; that they might leave some of the surfaces without cutting them so thin as would be necessary to make them retain foil, leaving a weak edge instead of a strong one. In cases where a free flow of saliva was anticipated, he liked to have a pretty large mass of absorbing matter, napkin or paper, so placed as to cover the sublingual ducts and the buccal ducts, daming them up firmly, so as to prevent the oosing out of moisture or blood, or the mucous secretion from the surface between the teeth. In some cases he used a ligature; but more frequently, if circumstances were favorable, a wedge of pine wood, so cut as to be retained tightly on the gum, and so that the shape of the teeth might retain it at the edge of the cavity, braced firmly upon the edge of the teeth. It produced considerable pain, but the end obtained, that of securing perfect dryness of the lower part of the cavity, was of great value. The napkin, the paper, the wedge and the ligature, so far as he recollected, comprised all the means he had employed to obviate that difficulty, and he found very few cases where they were not sufficient. He did not like adhesive gold, he wanted a gold that would go into a cavity like kid, or thin muslin, and present as little resistance to the pressure of the instrument as possible in any direction, After having applied any pressure to the gold, it was a very great object to avoid moving it afterwards, and he had been in the habit, for a year or two, of using a second instrument in his left hand, for the purpose of holding the first few pieces of gold in their place, Even in the case of operating on the lower jaw, he had often got his patients to hold the sublingual compress, and used both his instruments. He found a very great advantage in the use of two instruments, in regard to the facility of introducing the gold, for he could make many passes with his left hand that he would otherwise be obliged to make with his right, and in quicker time get the pellet to its place.

A gentleman here inquired how the napkins were retained in their place when both his hands were occupied.

Dr. D. replied that the upper napkin required no retention, being placed over the buccal glands, and adhereing to the surface of the teeth. There was very little difficulty in retaining the one placed over the sublingual glands; often it would be retained without assistance, if placed skillfully under the tongue; but he generally let his patient place the first finger of his right hand on the napkin, and keep it in place. He often had to change the napkin, which he did without difficulty. Still, he considered that there were cases where it was next to impossible to fill a tooth dry. He found a great many bounds to his skill.

Dr. Hawes, of New-York, asked if the napkin did not conceal the cavity from the light, and how Dr. D. managed in that case.

Dr. D. replied that that difficulty varied in different mouths. There was only one way to answer that question, and that was, "stretch it!" (Laughter.)

Dr. Hawes.—That is the very question. With an instrument in each hand, and a napkin in the mouth, how do you "stretch it?" (Laughter.)

Dr. D. explained how he did it, by distending the mouth by extending his finger' as he carried the pellet to its place on the instrument. He recommended his brethren to adopt the practice of using a second instrument, if they had not already done so. It overcome the difficulty of hidden cavities, and of broad cavities, where they had no sharp angles to retain the gold in its place when it was first put in. He had found it of great advantage, and had succeeded in overcoming difficulties that he could hardly have conquered in any other way.

Dr. Fuller, of Portsmouth, (N. H.) inquired if, when the tooth was partially filled, the filling got wet by accident, did he think it best to remove it?

Dr. D. replied, that he had no objection to the cavity being wet. The evil laid in the injury to the cohesion of the gold when it was packed together, and the finishing up afterward. He thought it best to dry the filling.

Dr. Blakesley inquired what objection the speaker had to cohesive gold?

Dr. D. said he could not use it. He formed his gold into pellets; he did not care about the size of the pellets, only he graduated them to the size of the cavity. He made them globular, like pills. All his pressure was from the center toward the external walls of the cavity, consolidating in that direction as he went on. His instruments were cubical in their structure, filed down to a plain surface, and turned at different angles. These were plugging instruments without serrated points. The object in serrating them was obtained by sharpening the quadrangles on a stone, which he always did before using gold, to secure the angles of the plain, making it perfect.

Dr. Roberts, of N. Y., gave an account of an operation performed by him on a lateral incisor, which was so much decayed that he could not obtain a wall sufficiently strong to bear the pressure necessary to fill the tooth. He imbedded the tooth, and the one next to it, in gutta percha, up even with the point of the tooth and overhanging on both sides. He then filled it with sponge gold, though he thought he could have done it equally well with adhesive gold, by properly preparing it and packing it in the same way. He held his thumb upon the gutta percha and filled the tooth, and could use nearly as much pressure as if the tooth had been strong. In such cases it was necessary to fit the gutta percha perfectly, otherwise they would be likely to break the tooth. After filling he cut out the gutta percha the shape of the cavity, leaving nothing but the gold for polishing. That was the only way, he thought, in which he could have saved the tooth. He gave credit to Dr. J. S. Clark, of N. O., for giving him the idea.

At the conclusion of Dr. Roberts' remarks the Convention voted that half an hour of the afternoon session be devoted to a continuance of the discussion on filling teeth, and adjourned to meet at 4 o'clock.

AFTERNOON SESSION.

The Convention was called to order a few minutes past 4.

Dr. Perine was the first speaker. He said it had long been a desideratum among the profession to secure a composition for filling, that should resemble the teeth. They had now a composition—of which he did not claim to be the inventor—which was called the dissolving quartz. After this quartz had been dissolved, he had, in connection with his friend, the inventor, forced it to return to a crystallized state, sufficiently hard to cut his name with it upon glass. The preparation of the quartz was very simple; it was easily dissolved and easily crystallized. The difficulty which he wished to overcome was the contraction of the compostion after it was introduced into the teeth. He had experimented upon dead teeth, and by adding a little after the shrinkage, he could make a perfectly hard filling, and give it any shade he desired. He did not wish to present this to the Convention at this time, nor until it was perfected; but he was sorry to say, there were those in the dental profession, as in all others, disposed to steal one's thunder, he was anxious that they should give the subject the benefit of their scientific knowledge, and reap what advantage they could from the invention.

Dr. Allport stated that he had received a paper from Dr. Westcott, of Syracuse, which he would hand to the President.

Dr. Allport then proceeded to illustrate his mode of filling. He said that, perhaps, there was no better cavity to take than the one taken by Dr. Dunning in the morning, with a little alteration. He would take the same cavity, in a small mouth, and a very free flow of saliva, and make a compound cavity of it embracing not only the approximal, but the grinding surface, which was a cavity difficult to fill, and difficult to keep filled after it was filled. Let them imagine the tooth to be the second tooth upon the left side, and the cavity upon the posterior approximal surface. The first thing to be done in filling such a tooth would be to consider the health of the patient; the next, to separate the tooth, and prepare the cavity. In separating the tooth, he would, in the first place, take a chisel, so formed that he could readily cut whatever portion he thought necessary, to save filing, that being rather more unpleasant than cutting the tooth. He endeavored to make the cut much wider on the outside than on the inside in all lower molar teeth, for in this way it was more easily kept clean. The shape should be concave. He then removed the decayed portions in the usual manner. In shaping the cavity, he endeavored to give it the shape of the original tooth as much as possible, but he never sacrificed a good filling to the shape of the tooth. After he had removed the decay, he clipped off the enamel around the edge of the cavity with the chisel, and made it as smooth as possible, slightly counter-sinking it, so that he should have no trouble in making the edge of his filling perfect. He took particular pains to avoid sharp points, which were liable to be broken off in mastication.

The next thing was to know what kind of gold to use. He thought it was necessary, in some places in a tooth, to use gold that was remarkably soft. He had never used any for that purpose which he considered so good as that made by Jones, White & McCurdy, and by Abbey, of Philadelphia. At this point he preferred to use non-adhesive gold. The next thing was to prepare his gold in such a manner as to produce a perfect filling, and consume as little time as possible in manipulating in the mouth. Taking such a portion of non-adhesive foil as might be necessary—perhaps a whole leaf—he folded it into a *block*, of suitable size to cover the bottom of the cavity, and extend beyond the edge. He also prepared two similar blocks, large enough to cover the walls of the cavity and extend beyond the edges at the side and top. He then prepared his cylinders in the usual manner, and of two lengths—the one long enough to extend from the anterior wall to beyond the edge, the other of a little more than one third of the depth of the cavity. For the balance of the operation he prepared a quantity of Watts & Co.'s crystal gold, or crystal gold foil, which he used in small pieces. In bad cases, where the gums protruded and troubled him with hemorrhage, he used a wedge of some soft wood. If it hurt that was the business of his patient; it was *his* business to do his duty. In putting in the wedge, it would rise above the cavity, and, with a burr, he shaped it to the precise form of the cavity. Then taking his place on the *left* of the patient, with his instruments in convenient position, he put a piece of flax cotton, rolled large in the centre, and small at the ends, under the tongue, where it would lie readily, and also a smaller roll under each cheek, directly over the salivary glands; then, placing the chin in the palm of the left hand, he laid a folded napkin around the back of the tooth, so as to embrace it on three sides, and held it in place by the fore and middle fingers. With a little skill, these napkins can be removed and dry ones substituted as often as necessary. In placing the gold in the cavity, he grasped the instrument between the thumb and fore and middle fingers, and pressed the lip back with the little finger, and first laid the prepared *block* at the bottom ; then placed the lateral *blocks* in position, thereby forming a series of layers around the walls, and extending from the bottom to above the top of the cavity ; he then filled up *two-thirds* of the space, with the cylinders laid parallel with the floor of the cavity, then packed a sufficient number of cylinders against the anterior wall, and perpendicular to the floor, to hold the lateral blocks firmly in place. The whole inner surface was then thoroughly compressed against the walls of the cavity, and the balance filled up with the crystal gold or adhesive foil, taken up with the point of a serrated instrument, and with it packed into the cavity. After his gold was perfectly packed he filed it off, and the rest of the operation was as usual. In conclusion, Dr. A. exhibited a very simple instrument, the invention of Dr. Garrett, of Wilmington, Delaware, for keeping the napkin over the ducts.

The half hour, to which the debate on this subject was limited, having expired, a motion was made and carried to extend the time.

Dr. Dwinelle remarked that something was said in the morning about riding hobbies. He had large charity for those who rode hobbies, for he rode them himself. Before proceeding to describe any particular mode of filling teeth, he would like to describe a new method which he had adopted for (they must excuse the profanity) damning the ducts. It was a physiological fact, that the muscular effort of throwing the tongue back operated in such a manner upon the sublingual ducts, that they would not exude a particle of moisture, it closed them. He took a little piece of gold wire, and in three minutes twisted it in the form of tongs, half an inch long, or shorter. He just clasped the little protruding openings of the ducts with the tongs, let the tongue find its place, and they were effectually closed. The truss principle had before been resorted to by him, and it was a very good one. The old method of bibulous paper and napkins, too, was a very good one.

He would assume that he was required to perform a very difficult operation, which rendered it necessary that the mouth should be kept open an hour or an hour and a half, or even two hours, and he did not want the gums to get wet. He took some strips of fine bird's-eye linen, four inches wide, and tore them into strips from an inch and a half to two and three inches in breadth, and coiled them up into a roll, so that they were about the size of an ordinary sized little finger. He turned them round in a crescent shape, and laid some half dozen of each size of these rolls on his table, in the form of an arch. He wiped the mouth dry and applied a crescent shaped roll to the ducts on the upper side; it would keep its place, adhering to the mucous membrane. He did ditto on the lower side. He then turned to the sub-lingual ducts and applied a larger roll. In a great many cases the mouths would remain dry during the whole operation; so much so, that oftentimes, in removing the linen, it was found necessary to moisten it, in order to avoid tearing off a portion of the mucous membrane.

Dr. Dwinelle then described an operation which he had performed on an inferior molar tooth, very much decayed, which he took it upon himself to say had been perfectly successful. The lingual wall alone remained, and the gum protruded over into the cavity. (The speaker drew a representation of the tooth on the blackboard.) He wanted to restore the tooth to its original form. In order to do this, he had got to build up the approximal wall artificially. One way would be to drill pits or cells, and fill these pits with crystalline gold, letting them rise above the surface, extending over and interlocking with each other, until he had built up the wall; then he could extend it out and work in the crystalline foil until he had erected the whole superstructure; then he took crystal gold and filled up until he got somewhere near the top of this protuberance, and then filled the whole with adhesive gold, in such a manner that it would correspond with the shape of the tooth, packing it until it crowded the gum back, and gave an entire wall. He then alternated with the crystal gold foil, occasionally pressing this back to give the proper formation to it, until he got up above the gum wall, then he let it double up together, and built directly upon the superstructure. The advantage of this process was that his gold, from beginning to end, was equally consolidated, it was a unit, continually accumulating, from beginning to end—just as one portion of clay added on to another became a part of the whole. It was finished in the usual manner.

Dr. Roberts asked what was to be done if the cavity got wet.

Dr. D. at once imagined himself submerged in the middle of the operation, and proceeded to describe the process of restoration. Every surface, he said, was a receiving surface, except the last one. The first thing, after making the mouth perfectly dry, was to pass a burnisher over the whole of that surface, then press bibulous paper upon it, and dry it anew. He then cut over the surface to get a new surface; then dried it anew. Then he cut the surface backwards and forwards and across, until he had worked it up into a velvet surface. Previous to this, however, he had taken a little strip of crystal gold, No. 1, and annealed it, and got it into particles corresponding with the size of the hole. Having secured his velvet surface, he took a piece of annealed gold, fresh and perfectly adhesive, and laid it on top, and with instruments covered all over with serrations, pressed it down to its place. He then went all over the surface with an instrument terminating in two points, and finally worked the gold into perfect integrity with the other, and was restored to where he was before the flood gates were opened. He would venture to put those plugs to any test they choose; they would not separate at the point of submerging any sooner than anywhere else.

Dr. D. then went on to describe an operation for restoring lateral incisors that had lost a very large portion of their substance, say one half, which he did by means of diagrams, in a very acceptable manner. His great care was to be sure that his gold, at every stage, was a unit. When the tooth was filled, he said he did not like the gold glittering surface, which reflected light only one way, while he wanted it to reflect light every way. To remedy this, he took a piece of sandal wood, the end moistened and broken up a little, and plunged it into pulverized pumice, and stippled over the entire surface, and then washed it, and so continued until he got a velvet surface with a whitish yellow tint. He had a friend who had four frontal incisors filled as much as the one he had been describing, and he would much prefer the teeth as they were to any artificial teeth.

Dr. Straw, of Bangor, inquired if this filling could be brought to the cutting edge.

Dr. D. replied that it could. In the very case he had been describing the filling occupied a large portion of the front surface. After filling the tooth, he dismissed his patient, but he found afterwards that he articulated only upon the inner surface of the gold. This had bent it round a little, but had not disturbed the joint at all.

Dr. Townsend, of Philadelphia, then described his method of filling cavities in the proximate surfaces of bicuspid teeth, so as to make them stand. It was a difficult thing to prevent the filling in such a tooth from being very imperfect. He said that the way to make difficult things easy was to get at them fairly. He wanted a cavity that he could see into, and there were some cavities that he could not see into unless he had plenty of room to throw light in. In the case supposed, the first thing would be to see if the tooth approximating to the one to be filled was sound, for if he found a carious spot there he knew he would have some chance of getting more room from that tooth for the probe. If he found decay there, he should take care in removing it to preserve the appearance of the tooth on the outer or buccal surface, making the space wider considerably at the sub-lingual than at the buccal surface. This, for two reasons; one, to preserve the shape of the tooth; the other, because the food is always pushed in towards the tongue, not outwards towards the cheek. The next step was to ascertain how strong the enamel was, and how much he had to cut away. In cleaning out the cavity, one thing was to be guarded against, and that was, not to run to the nerve needlessly. He was satisfied that at this day, when the hobby of killing nerves was ridden so furiously, there were many killed needlessly. His theory was to save the life of the tooth when he could; he therefore used instruments with a broad cutting edge, that would not be likely to drop into the nerve cavity. After cutting into the surface, he then endeavored to secure a neat edge at the upper end of the tooth, and then proceeded to cut away the lower edge, having these edges as nearly square as he could, particularly at the margin nearest the edge of the gum. To prevent moisture, he used, besides napkins, in cases of this kind, a wooden wedge, dove-tailed. He used generally orange-wood; pine wood he thought too soft, and hickory too unyielding. This should be inserted gently, and by the exercise of proper care, the gums becoming little by little obtunded, it could be placed where it was wanted; this entirely stopped the water above from coming down; and then, having his napkins ready, he was prepared to go to work. The question was to make a filling, and to make a filling at the upper part a little more perfect than anywhere else. He was eclectic in his practice; he used gold in all imaginable shapes. For such cases as this, he took a sheet of gold and folded it lengthwise until he had, as nearly as he could judge, the width of the depth of the cavity, and a little more; he then folded it over upon itself for the length, and then folded it into a block. He folded four or five pieces into the same shape. Then, having the cavity dry, and cutting other gold into little pallets, with sharp points, that he could insinuate anywhere, he proceeded with his second instrument held in the left hand—the dextrous use of which he considered indispensable—to place these blocks of gold in the tooth, pressing them firmly to the upper margin of the cavity, and allowing them to project a little. He packed the gold away with one instrument, while he held it with the other. It was a rule with him that if his first piece became dislodged, he took it away and put in another, and never attempted to use it again, because it would not fit another place. So he went on building up with similar pieces with the lamina pushing outwards. When he got near the end he began to pack in with his pellets, and so on, filling in all the way, until he got down to the end of the cavity. Then he endeavored to insert his instrument between the folds, but usually he found that when he had gone on with the pressure upwards and inwards, there was no place where an instrument could be inserted, except a pointed one, unless a great deal more force was used than was necessary. Some fillings needed to be harder than others. A filling might be perfectly solid, and yet not be as hard as molten gold, and the filling under consideration was one of this character. It might be put in perfectly good, it might have its junction with the walls perfect, and yet not be so solid that the instrument could not be inserted into it. Then he went over the gold with an instrument with four points, with which he condensed the whole surface. He had kept the cavity dry, for he considered any condensation after the filling had been wet, as almost, if not entirely, useless. He burnished the gold for a considerable time, for he found it had a good effect. He then filed it and burnished again, and so on until he got it down to the edges, and until it was one continuous surface. The burnishing compressed the gold considerably. After he had filed and polished, he went over the surface with a piece of sandal wood, (which he thought as nice wood as could be used,) and very finely pulverized quartz, which was a little finer in its grit than pumice. He then washed perfectly clean and burnished again; and then took a piece of clean stick and rotten-stone, and it was a curious fact that the bone of the teeth was polished more rapidly and smoothly with rotten-stone than with pumice, though it was finer, and entirely removed the file-marks, so objectionable in an operation of this kind.

On motion of Dr. Straw, of Bangor, the regular order of business was suspended, and Dr. Sanborn, of Andover, was invited to address the Convention on the subject of taking casts.

Dr. Sanborn said, he spoke only because he thought they would find many advantages in knowing the power of the metals with which they took casts. He got the first hint of his method from Dr. Hawes, of New York. He had a sheet-iron cup about two-and-a-half inches square, and one-and-a-half deep. He filled this cup with lead, having the plaster cast prepared, and the damper it was, the better; and let it be remembered, that if they could plunge it in the moment they took it from the model, the better it was. The secret was, to begin when the lead was entirely molten, and keep working in from the edges to the centre, so as to have it gradually cool. When it had cooled so that they could scoop it up, and become granulated, he could make no better comparison, than to compare it with hasty pudding when it was done—it would stand up of itself—then take the cast, and plunge it in just right, and the moment the surface of the cast struck the lead, it received a perfect impression, and gave a perfect *fac simile* of the plaster cast. Then, if he was in haste, he plunged the cup into water, and took up his tin, and put it into the furnace, melting till it was just molten. While this was going on, they might take a little strip of sheet lead, fold it as they wanted it, and twisted it round, so as to fit exactly. Having taken out the plaster cast, he melted the tin, which was to be treated in the same manner with the lead, string it up from the edges to the centre until it granulated, and the moment it began to harden, he poured it in, and had the cast. He could take a cast of the mouth in plaster, and be prepared in three-quarters of an hour to strike up as perfect a plate as they could get by any other process.

In answer to inquiries, Dr. Sanborn said he used zinc many years ago, but had found lead far superior, when rightly used; that he regarded pure tin as altogether more advantageous than any combination of metals; and that the impression taken was perfect.

Dr. Spaulding, of St. Louis, moved the appointment of a committee by the chair, to take into consideration the subject of Dental Nomenclature, and report at the next meeting. He said it was evident from the discussions there, that they had no fixed nomenclature, especially for mechanical operations, and he thought the dental profession was far enough advanced now, to have a fixed meaning for the terms used in its practice.

Dr. Seabury, of Providence, thought this want had been well met in Prof. Harris's Dental Dictionary.

Dr. Spaulding replied, that notwithstanding the publication of the Dictionary, there was still much confusion in terms, and he thought the appointment of such a committee would call the attention of the profession to the matter, and have a good effect. However, if there was any objection, he would withdraw his motion.

The Convention then took up the question of the best

TREATMENT OF ALVEOLAR ABSCESS.

Prof. Harris was the first speaker. He said, he did not know that he could say anything new upon the subject, or anything different from what he had stated elsewhere ; but a very novel and successful method of treatment was described to him some two or three years ago, by Dr. F. H. Badger, of Nashville, Tenn., which he thought would be interesting to the members of the profession, and he would describe it.

In the treatment of alveolar abscess, it was important that the remedial agent should be brought directly in contact with the inner walls of the sac, and unless this could be done, it was exceedingly difficult to treat it with much success. Impressed with this opinion, Dr. Badger adopted a somewhat novel and ingenious method of procedure. In the first place, he closed the external opening of the cavity leading to the central chamber of the tooth, with gutta percha or gum elastic, perforating this at the most convenient point, and then charging his syringe with the medicated agent he wished to introduce—a solution of nitrate of silver, or an alcoholic solution of tanin and gum benzoin—he injected it into the tooth, and it passed up through the canal, and escaped through the external opening of the gum. In this way, the medical agent was brought immediately in contact with the walls of the sac, and with the walls of the fistula opening from it, and which communicated with it. He (Prof. H.) had been completely successful with this method—more so than with any other—but instead of using nitrate of silver, he had used a solution of creosote, as recommended by Dr. Ballard, of New York. There were some cases where so large a portion of the vitality of the tooth had been destroyed, that nothing short of its removal would effect a complete cure. At least, he had failed very frequently. After having apparently healed up the ulcerated surfaces, and obliterated the fangs to the very extremities, a recurrence of abscess had taken place, perhaps three times in twelve months; although in these cases, the amount of matter secreted and discharged through the gums, had alway been very small in comparison to the discharge when the root was not completely obliterated.

Some twelve or fifteen years ago, Prof. Harris said, he was requested by a medical gentleman of Baltimore, to visit a patient of his, who discharged three or four times a day, a half dozen drops of pus from behind the margin of the palate. The physician had been unable to discover the source of this matter. At first, he thought it might come from the maxillary or frontal sinuses; he, (Prof. H.) thought it might be secreted by the mucous membrane of the posterior nares. On visiting the patient, and becoming satisfied that it came from neither of these places, he passed his finger round under the upper lip, outside of the alveolar border, and immediately over each of the central incisors, a small tubercle about half the size of a pea was discovered; and perceiving that these teeth had lost their vitality, he had little difficulty in arriving at the conclusion that the pus came from abscesses at their roots, and that it had made for itself a passage through the nasal plate of the superior maxillary bone, and from thence passed back between the periosteum and mucous membrane, perforating by the posterior portion of the velum, and escaped in the manner described. Under the circumstances, he recommended the removal of the teeth, to which the patient readily submitted, and in three days the discharge ceased.

About six months ago, a lady of Baltimore, about fifty years of age, consulted him under similar circumstances, at the request of her attending physician. The first molar on the left side was in a necrosed condition, and from the appearance of the gum, he had every reason to believe that there existed in the alveolus an abscess, and that the matter had come from it. He advised the extraction of the tooth; she submitted to the operation, and in three days was perfectly relieved.

Some two or three years ago, a gentleman called upon him to be relieved from a similar discharge. But a day or two before, his incissors being painful to the touch, and so much decayed that they could not be restored, he had them extracted. From the description he gave of the condition of the teeth, he (Prof. H.) felt convinced that abscesses had formed, and that the matter came from the inside of the sacs, and he assured the gentleman that within three or four days he would be relieved from the difficuly under which he was laboring.

In cases where the matter was discharged through the crown of the tooth, he employed the same treatment, but it would not be necessary to close the orifice with gutta percha, but merely to inject the fluid forcibly, which would carry it into the sac, and in that way reach the ulcerated walls of it.

In answer to an enquiry with regard to the composition of the solution he used, Prof. Harris said, it was about in the proportion of twenty-five drops of creosote, to an ounce of diluted alcohol.

Dr. Roberts said, he hoped to hear a great deal on this subject, for he had treated a great many cases himself, and he supposed other members of the profession had done the same. He believed thousands of teeth were extracted every year, after alveolar abscess had been formed, which might have been saved by proper treatment, and he considered this a very important point of discussion in the proceedings of the Convention. At least, it was very important to many of their patients that their teeth should be saved, especially front teeth, after abscesses had formed; and his success in the treatment of such cases induced him to state the method he pursued. He injected nitrate of silver into the root, and continued the injection until the matter ceased to flow from that point. Then he introduced with a small broach, floss silk saturated with creosote, as far as possible clear into the alveolar process. At first, he let it remain one, two or three days, so that the matter should not form and dam it up, and cause pain. When it was removed, it threw off a very bad odor. This process was to be repeated from day to day, and they would find it would take perhaps months to cure the disease. After the tooth was entirely cured, they should put their gold clear to the very point of the root, and build from that.

Dr. Roberts was asked what he would do if an abscess should form after the tooth was filled, and replied that it would never be so large as before. He said further, in answer to a question, that he did not know the exact proportion of nitrate of silver he had used; it was such as was used for the treatment of gums, and could be obtained of the apothecaries.

Dr. Field, of Waltham, said his experience in this branch of practice had not been very extensive, but where there had not been a fissure open enough to inject the fluid, he had found that by drilling through the alveolar bone, just above the roots of the tooth, he could reach the disease. In such cases, after he had cleared out the cavity, and filled under the root clear to the very point, he then opened the abscess with a little broach, and let the matter out. It seemed to him, that when the sac was full of fluid, by simply injecting through the root, they could force fluid enough to mix with that of the tooth, to answer their purpose. He had done it in every conceivable way; he did not use floss silk, but prepared flax, which was very fine indeed.

Dr. Roberts thought the difficulty with the flax would be, the liability that a piece would be left in the cavity.

Dr. Field did not think there was much danger of this.

Dr. Mowe, of N. H., said he took considerable interest in this subject, and gave an acconnt of an operation he performed on an incisor, which had been filled, and apparently well filled. He took a small drill and opened into the dental canal, which he enlarged to the end of the fang, as near as he could judge, and was able to see into it. Then he applied pure creosote, on a bit of cotton, to the end of the cavity, and filled it up with cotton. The patient came again in three days, and the sac formed by the abscess had disappeared. He made another application, and in ten days it was all well, and he filled the tooth, and it had never given her any trouble since. This was three years ago. He had treated another case, where an abscess had gathered on each of the four superior central incisors, and the alveolar process was much effected, in the same way, curing one tooth at a time. All he used was creosote applied as he had described.

Dr. Roberts said that he should think ten days, or even fifteen, a very short time to allow for the operation.

Dr. Mowe stated that he steeped the gold in Creosote, before putting it into the tooth.

Dr. Dwinelle said the treatment of alveolar abscess was much better understood now than formerly. An abscess of this kind was evidence of the presence of a foreign substance, in all probability a dead nerve, which nature was trying to dispose of, just as she did when a grain of dust got into the eye. Common sense said the first thing to be done was to remove the foreign substance ; consequently, he recommended the removal of the nerve ; the bone of the tooth was not solid ; it was full of little cavities, which were full of a foreign substance, the residum of the dead nerve, which must be absorbed. The best method was to insert the oil of creosote upon floss silk; let it remain 24 hours ; renew it and insert again, charged with creosote, and so on ; then fill the nerve cavity. Still the abscess was there, and had got to be disposed of. Plunge in the lancet ; then take a sharp instrument, which answered the double purpose of a probe and an excavator, and plunge it down to the very extremity, and examine and ascertain if there is any foreign substance there.

They would often find a deposit of salivary calculus, or something of that sort ; such as had been found in the brains, the lungs, even the larynx and other parts of the system. If any was found, it should be all scraped off. Here another principle of the animal economy came in to insure their success, and that was, the scraping of the bones excited inflammation, and this caused nature to throw out a healing fluid, which came to the assistance of the operator. They had then opened the way for the discharge. After the discharge, a drop of creosote was again to be introduced, and the operation was completed.

Dr. Miller, of Worcester, remarked that, although the subject was of great importance, he should say but little at this time. He had pursued the methods of cleansing the fangs, and injecting various solutions into the sacs, as described by previous speakers, and in addition, had used the lancet freely —cutting deep ; and into the incisors, with suitable instruments, introduced a granule of crystallized nitrate of silver, one-fourth to half the size of a grain of wheat. He had seen good results from this practice, and would strongly recommend it to the profession. One case he would mention, however, embracing the superior central incisors, which had entirely baffled his skill. At the time the patient applied to him, the ulcerations had existed a long time, producing an unnatural fullness of the mouth. The openings to the sacs were free—the nerve canal being much enlarged. In cleansing the fangs with a little cotton twirled around a small broach, and dipped in a solution of whatever was used at the time, the patient would frequently experience sharp pain, like that produced from cutting inflamed dentine.

The question was here asked if the pain was not caused by pressing air into the sac.

Dr. M. replied that it was not, as he had thought of that, and used an instrument much smaller than the nerve canal. Careful examinations, at various times, proved the existence of morbid sensibility of the parietes of the dental canal, not, however, equally disseminated over the whole surface. After treating the case from four to six months, without the slightest improvement, it was abandoned.

Dr. Wetherbee, of Boston, described a case which had been under his care, where there was an abscess on each of three incisor teeth and the cuspidati, which had been filled. The case was a very difficult one, from the fact that there were so many decayed nerves and so great an amount of inflammation. He removed the fillings, and out gushed any quantity of offensive matter. He syringed out the cavities faithfully, and also prepared an instrument for scraping the surface of the nerve cavity, as far as he could. This operation he performed on all four of the teeth. He then injected cologne water for some length of time, and afterwards filled the cavity with cotton, and requested his patient to let it remain several days. At the expiration of this time, she called again, and he found the emission from the gums had somewhat subsided. He finally plugged the teeth without any further introduction of liquids to the nerve cavities. After plugging the teeth thoroughly, he took a sharp excavator, and commenced upon the alveolar process, scarifying the gum, and scraping the alveolar process for some distance round the center of the opening of the abscess, until he felt confident he had broken up every vestige of decomposition, occasioned by the abscess upon the alveolar process. He then dismissed the case. The lady was much pleased with the operation, and there had been no return, so far as he knew, of the disease. He believed, with Dr. Dwinelle, that, by thoroughly scraping and removing every remnant of the disease, and by injections, the difficulty, in ninety-nine cases out of a hundred, could be removed.

Dr. Forbes, of St. Louis, gave an account of a very interesting and peculiar case which had come under his observation, with regard to which, he desired the benefit of their experience and knowledge. The case was that of a lady whose upper central incisor, on the right side, was attacked so virulently, that the dentist she consulted thought proper to extract it. The disease spread, attacking one tooth after another, which were successively extracted, but without curing the disease. The lady thought she had necrosis, or a disease of the jaw. She had been treated with chloride of potassium, zinc, and creosote. In his absence, he had prescribed constitutional treatment. It was so interesting a case, that he had called in quite a number of the dentists of St. Louis to consult upon it, and he would like to have the advice of his brethren. [Dr. F. gave a minute account of the present condition of the lady's mouth, but his remarks, from the position he occupied, and the low tone in which he spoke, were, in great part, inaudible to the reporter. The same difficulty was realized with regard to several of the other speakers.]

In answer to inquiries, Dr. F. stated that the patient was a lady, of healthy constitution and simple habits, and twenty-five years of age; that the emission comprised two or three pustules of pus during the day; that there was no dead bone discoverable by the probe; that he could not probe more than a line, or a line and a half; and that it was not an hereditary disease.

Dr. Straw, of Bangor, recommended an abstemious diet as likely to do more than anything else.

Dr. Locke, of Nashua, said his experience did not confirm the use of the powerful remedies which had been referred to. He had not been successful in the use of creosote; he had found that the tooth became a source of irritation in the socket, and he had ultimately lost it. He had also tried an injection of nitrate of silver, and in two or three cases, had benefited the patient by its use; but he did not think he had benefited any case by the use of creosote, and he feared if it was used as freely as had been described, the result would be the destruction of a great many teeth, which might be useful if they simply adopted the "let alone" principle. He had used tincture of nut-gall and tincture of tannin, and he thought he had produced better results from their use than by anything else. He had cured several cases with them, and he thought them the safest and most useful remedies for the disease. If the case was not a very troublesome one, it was his experience that it was not best to meddle with it. He was pleased with the suggestion of Dr. Miller, and thought it might be useful in a good many cases.

Dr. Allport suggested the practice of opening into the abscess, and the application of creosote on a pledget of flax cotton, in immediate contact with the apex of the fang—a vigorous application, so as to break up the abscess.

The Convention then adjourned, to meet on Thursday morning, at 9 o'clock.

THIRD DAY—FORENOON SESSION.

The Convention was called to order shortly after 9 o'clock, by the President.

The record of Wednesday's proceedings was read by the Secretary, and approved.

The Chair announced the first business in order, to be the fixing of the time and place for holding the next Convention.

Dr. Hawes, of Providence, moved that when the Convention adjourn, it be to meet at West Point, on the first Tuesday in August, 1858.

Dr. Perine moved to amend, by substituting Cincinnati for West Point.

After a brief debate, the amendment was adopted, and the resolution, as amended, adopted.

Dr. Goldey, of New-York State, moved a reconsideration of the vote. He wished the Convention to meet at Buffalo.

The motion to reconsider was put, and lost.

On motion of Dr. Bonsall, a committee of two was appointed by the chair to audit the Treasurer's account, as follows:—Drs. Bonsall, of Cincinnati, and Perine, of New-York.

On motion of Dr. Allport, the paper by Dr. Westcott, on "Cheoplasty," presented by him yesterday, was accepted and a copy ordered to be furnished to the Dental Journals for publication if they desired it.

Dr. Johnson then moved a reconsideration of this vote, for the purpose of referring the paper to a committee, and the reconsideration was carried.

Dr. Johnson moved that a committee of three be appointed to examine the paper, and report upon it.

Dr. Spaulding, of St. Louis, offered an amendment, giving the committee full discretionary power in the matter, which amendment was accepted by Dr. Johnson, and the motion adopted.

On motion of Dr. Allport, it was voted that the committee consist of the editors of the three Dental Journals.

Dr. Townsend, from the committee appointed last year, to consider the expediency of the establishment of a uniform system of prices, submitted a report, which was listened to with close attention, and frequently applauded.

As the resolution appended to the report contains the substance of the whole matter, we give it only.

Resolved, That in the judgment of this Convention, the formation of county, town and neighborhood societies of Dentists, is among the best of all methods for the government of their social relations, their mutual improvement, the harmony, dignity and elevation of the profession, and that to such distinct organizations, properly belongs the regulation of fee-bills, the repression of quackery, and whatsoever in the practice, conduct, qualification and character, of individual practitioners, concerns the general well being of the profession.

It was voted, on motion of Dr. Spaulding, of St. Louis, to accept and adopt the report and resolution.

Dr. Miller, of Worcester, (a member of the Business Committee), then addressed the Convention briefly on the subject of the preparation of business. He concluded his remarks by offering the following resolution, which was adopted:—

Resolved, That a committee of five be appointed by the chair to prepare and arrange the order of business, and subjects for discussion, at our next annual meeting, and that said committee announce the result of its deliberations to the Dental profession, either by circulars addressed to members individually, or through the medium of the several Dental periodicals, as early as January, 1858.

The committee appointed to examine the Treasurer's accounts, reported that they had attended to that duty, and found them correct, and that there was a balance in the treasury of $40,56. Report accepted.

MISCELLANEOUS BUSINESS.

Dr. Sylvester, of Lyons, N. Y., at the request of a member of the Convention, exhibited a plate, which he said was made as a temporary plate of 18 or 20 karat gold, with alloys of copper, silver and platina. The plate was worn about a year, and when removed for the purpose of constructing a permanent plate, it was found that its palatial surface had become coated with what appeared to be quicksilver, while the lingual surface was in its normal condition.

Dr. Dalrymple, of New-York, said that some eight years ago, he made a set of teeth, and two weeks after they were put into the patient's mouth they were returned to him, owing to the plate being, as it was said, of impure gold. He was unable to account for it, and consulted some twenty dentists, neither of whom could give any explanation. But Dr. Reynolds, now of Waterbury, who was then a student in his office, told him that if he boiled a plate in tin, it would have just the same appearance.

Dr. Sylvester.—Then the appearance would be on both sides.

In answer to questions, Dr. S. said the plate was pickled in a porcelain dish ; that the male die was of zinc, and the female of lead.

Dr. Branch, of Illinois, mentioned a case where it was complained that he put bad gold into a plate. On examining it, he found it spotted over with what he considered oxide of murcury. The gentleman said it could not be so unless he (Dr. B.) put it there. On looking into the matter very closely, he finally ascertained that the appearance was caused by a preparation of chalk and mercury, which the patient—a physician—had had on his finger when handling the plate. Though the preparation was brushed off from his hands, there yet remained enough to discolor the plate ; and perhaps the one exhibited was affected in the same way.

Dr. Sylvester in reply to the suggestion, said that one side was entirely covered, and the other entirely free.

Dr. Roberts stated that he had removed a clasp from the mouth of one of his patients, which presented a similar appearance. He found that it was caused by quicksilver that he had used and that had got on his hand at the time of casting it.

Dr. Spaulding, of Dedham, suggested that such effects demonstrated the importance of investigating and understanding the physiological condition of the system. If it was a fact, that a plate inserted into the mouth could extract poison from the system, it was an important fact to be understood by every medical man. If he understood the matter, the second plate was not affected in the same way. It was a matter of importance and interest to their profession, that they should understand well what deposits could be made from the fluids of the mouth, or from anything they could do in the mouth, by the insertion of plates or fillings. If they found that the system was surcharged with mercury, so that it made a deposit upon the plates, means should be used either to relieve the system of this amount of mercury, or correct the secretions of the mouth, so that their plates should not be affected by them.

Dr. Goldley, of Oswego, said that three or four years ago he inserted a plate, on which, at the end of about a year, he found quite a heavy deposit of mercury. He boiled the plate in acid, and removed the deposit without difficulty; he put it in again, and in about a year, found about the same quantity deposited upon it. The patient was not conscious that she had ever taken any mercury, but it was quite evident that she had. She was uncommonly healthy. He had boiled the plate twice, but there was even now a slight coating upon it.

Dr. Dwinelle was then called upon, and addressed the Convention. He said, perhaps there was no department of their art which made it approximate so much to a divine art as that department which had for its object the regulation of the teeth and the consequent regulation of the general deformities of the mouth.

One great difficulty in the way of correcting irregularities and deformities of the mouth had been the inability to make fixtures of sufficient strength to answer their purpose, while they were small enough to be practicable. A few years ago, having this in view, he undertook the construction of a new instrument for that purpose. He found an old case of surgical instruments that came, originally, from London, and on the hilt of each instrument was screwed or consolidated a piece of zinc; and he found, on reference to his library, that this was often resorted to to prevent valuable instruments from rusting. He thought of making his instrument of steel, small enough to be practicable, and applying the zinc to prevent rust. His mind at once reverted to the simple screw and nut, or what is familiarly known as the jack-screw. He went to work and made some of these, not over an inch or an inch and a quarter long. This instrument was susceptible of every variety of modification, and could be used at any angle. It would not rust in the mouth enough to injure it, but the zinc ends required renewing occasionally, on account of the waste by galvanic action. He thus had an instrument capable of spreading the mouth almost entirely apart, at the same time that it was not in the way, as other fixtures were. His patients preferred this method of operating to any other which he had adopted. One reason was, that the pressure was firm and altogether in one direction; it did not admit of a vacillating motion, backwards and forwards, which was conducive to undue inflammation; the constant pressure, too, operated to close the blood vessels, so as to forbid any excessive inflammation. [Dr. D. explained, by diagrams, his method of using the instrument.]

Dr. Clark, of New York, inquired if Dr. D. did not find that the life of the teeth was destroyed?

Dr. D. replied, that they were not. There was sufficient circulation on the other side. With this instrument he had forced the central incisor, in a patient 33 years of age, from a position where it was a serious interference with the articulation, into its proper position in the arch, in five weeks, without any trouble whatever. He had had several cases where the patient was 18, 20, or 25 years old, but he thought this case of 33 years was remarkable. He felt confident that he could succeed in all cases, even at that age, unless the patient was of a scrofulous habit, and then he could modify the difficulty. He fixed the instrument in its proper position by attaching plates to the teeth, in which he set the points.

Dr. D. then described a very interesting and difficult case which had been under the care of Dr. Dalrymple, of New York City, and which Dr. Perine had previously alluded to. The patient was a young lady, fourteen years of age. At birth she had a hair lip, which deformity had been corrected as far as possible; but as her teeth developed, she had no frontal incisors; originally, an elemental or supernumerary tooth came in and occupied the place of all the frontal incisors. The articulation arranged itself in such a manner that the upper were continually embraced by the lower teeth; ultimately, they must have been brought almost in contact. The arch was exceedingly narrow. The two superior cuspid teeth would have been brought entirely together in five years, and any one could see the consequences; the palatine arch must have been closed up, and all the unhappy consequences which would naturally follow would be the result. Dr. Dalrymple, after working a year, succeeded in separating the cuspid teeth so as to get sufficient space for the four frontal teeth; he supplied the lost incisors, and almost entirely corrected the deformity, changing the expression from an unpleasant and almost hideous one to a very pleasant and agreeable one.

Dr. D. exhibited a cast of the mouth taken before the operation, which was certainly sufficiently deformed, and also the cast taken when the work was finished, which looked as if nature had done her best to give the lady a perfect dentition. In conclusion, he expressed the hope that Dr. D. would himself explain the case, for he felt that he had not done him justice. He was entitled to a great deal of credit for the operation, and he (Dr. Dwinelle,) honored him for it. He knew the difficulties in this comparatively untrodden field; for, with all respect to the past, it was almost entirely a new field.

Dr. Dunning asked Dr. Dwinelle if he found many cases in which the jack-screws were available? He did not see how, in many cases, they could be applied in pushing forward in the right direction.

Dr. D. replied, that it was often necessary to construct an opposing surfacc, artificially fashioned.

Dr. Roberts inquired what could be done with very young patients, where it was almost impossible to attach any fastenings to the teeth?

Dr. D. said, in that case he made them, and explained on the black-board how he did it. He said he often had to break up the articulation altogether. The patient masticated with the fixture in his mouth. He had moved a tooth half an inch, by actual measurement, in this way. He straightened out a lady's teeth, which were "confusion worse confounded," in five months' time; in any other way it would have taken a year. Oftentimes the right direction could be given to children's teeth by seeing them two or three times; for the adage, "just as the twig is bent the tree's inclined," never applied more forcibly than in their profession. Simply by the use of a rubber band, or a piece of pine wood, he had corrected the worst kind of deformities. In the case of a child, the teeth often had to be tied in their place after they were got there. Dr. D. said, he did not think it safe to fill teeth before they became fully developed, as there was danger of inflammation; still, it was necessary to do it sometimes, but it should be done with great care.

Dr. Dalrymple, of New York, then explained the operation to which Dr. Dwinelle had referred. His description was substantially the same, but more minute in the details. He said he saw the patient once a week, on an average, for fifteen months, and had every conceivable difficulty to contend against. He consulted Dr. Dwinelle several times, and received many valuable suggestions from him. One very gratifying change, caused by the operation, was the alteration in the appearance of the upper lip. The work was performed with wedges, and he found, at one time, that an inflammation had been excited; but, on reflection, he came to the conclusion that was just what he wanted, as the result proved, for the inflammation he had excited caused the cartilage of the nose (which had been drawn down by the operation for the hair-lip) to relax, and allow the lip to take its natural shape; and the result of the whole was that the patient was now a pretty good looking girl.

Dr. Allport exhibited some models of a case operated upon by Dr. Elisha Tucker, where the upper teeth lapped over a great deal, which had been treated very successfully, and also described an operation of his own, which he said was half as bad again as that. His motto always was "Try!" and he never allowed a case to come to him, however difficult, without at least making an attempt to remedy the evil. The ordinary way of operating in the case to which he referred would have been to supply elastic ligatures; but the trouble would have been, that the ligatures would slip up and irritate the gums, and he concluded he would not try them. He attached plates to his molar teeth, and by sundry ingenious mechanical contrivances (which he illustrated on the black-board) effected his object. Dr. A. expressed his belief that the principle stated by Dr. Dwinelle was the only correct principle of regulating the teeth; the tooth was drawn to its place, and the blood vessels had no chance to become injected, consequently, there was no inflammation.

At the request of a member, Dr. A. then gave an account of a case of fracture which had come under his hands. It was that of a gentleman who was thrown from a hack, and kicked by the horse. The blow was upon the left side of the face, and it broke through the whole jaw, so that when the case came to him, the molar teeth occupied the center of the mouth. The surgeons of the hospital concluded they would rather not undertake it, and finally asked him to see the patient and decide whether he could do anything. The trouble was to get the jaw back to its place and hold it there. He could think of no way without a plate, and the question arose how to get a plate. He found it impossible to take an impression of the whole mouth in the ordinary way, and then tried to take half the mouth; but when he undertook to take off the wax, it tore all to pieces. Finally, after taking the impression, he filled a large syringe with ice water, with which he hardened the wax in the mouth, and then removed it without trouble, and thus got an impression of half the mouth. The other half he did not *take*, but *made*, by the half he had, and struck up a plate which was as the mouth would have been if it had been perfect. He took the plate to the hospital, and, with the assistance of the surgeon, removed considerable bone and some flesh that hung loose, and then pressed the plate into the mouth, and got each tooth into its proper place. He then bound the jaw firmly, and left him. The operation was perfectly successful.

Dr. Dwinelle stated, that some three years ago Dr. Miles told him that he had often regulated cases of deformed teeth in children, when the gums were in a mobile state, on the instant. Having cut about the tooth, he got the bearings on one side and the other; he would take a large forcep and press the tooth back at once. He mentioned this to show how accommodating the animal economy was.

Dr. Clark, of New York, said perhaps some would like to have a simple means of correcting cases that occurred in every day practice. In cases where the tooth turned round, from one-quarter to one-half, he fastened a gold spring round the central incisor, instead of making a plate, as was common.

Dr. J. G. Coates, of Virginia, explained and illustrated, in a very happy manner, his method of operating on deformed mouths. After fitting the plate, he sawed it in two in the center, and moved the teeth by means of screws attached to the sides. In seven weeks, in the case he described, he had the teeth in perfect form.

Dr. Sanborn, of Andover, remarked that a good deal had been said about preserving the teeth of the young, and perhaps it would not be amiss to mention a very simple method of securing the teeth of old people, which teeth had become loose. He took a small platina wire, drawn for the purpose, and wove it round and between the teeth, then cut the wire off, turned it down, and then the teeth were as firm as ever. He had used this method on the teeth of several old ladies and gentlemen, three, four and five years ago, and they were still firm and doing good service. "In union there is strength."

Dr. Forbes, of St. Louis, exhibited a very simple invention, made by Dr. J. H. Fairbanks, of St. Louis, for cooling wax in the mouth. It seemed admirably adapted to its purpose.

Dr. Roberts explained a method he had adopted to enable him to use the inclined plane to regulate the teeth of children, where it was difficult to get anything to rest solid on the lower jaw. He took an impression of the teeth in gutta percha, which gave a more perfect representation of the points of the lower teeth, than was obtained in any other way, and then made a plate of platina.

Prof. Harris, of Baltimore, then stated that, at the request of the Boston committee, he would move that the Convention adjourn at half-past one, and proceed at once to the boat for the excursion in the harbor.

While up, Prof. Harris continued, I must take occasion to express my deep regret at not being able to partake of the hospitalities tendered by our Boston brethren, having just received a letter which makes it necessary for me to return home at once. I regret this the more, knowing the character of our Boston friends, and that they have acquired somewhat of a celebrity, especially for the excellency of their tea parties, (loud applause,) having given one more than eighty years ago, (applause,) and provided a dish so large and so fragrant, that the odor thereof diffused itself through the atmosphere of our whole country, (renewed applause,) inspiring the people of our then infant colonies with such an ardent love of liberty, that they all came up as one man, and broke the chain which had held them for years and years in bondage. (Enthusiastic cheers.) It is, therefore, a source of deep regret to me that I can not be with them and participate in the festivities of the occasion.

The motion was unanimously adopted.

Prof. Harris then said, at the request of Dr. Allport, he would say a few words by way of caution, in regard to changing the position of a tooth too rapidly. Inflammation of the periosteum and pulp might be excited, which would terminate in the disorganization of this highly important portion of the tooth. Not long ago, a most interesting and highly accomplished young lady was brought to him by her father, with the view of ascertaining if something could not be done to restore the lost color of a tooth, which had been but recently brought into the dental arch. He at once perceived that the pulp was in a state of disorganization; that the tooth had lost all that portion of its vitality which it derived from the lining membrane; and, on enquiry, he found that the position of the tooth had been changed more than a quarter of an inch, in some five or six days, by the pressure which had been applied to it, for the purpose of bringing it forward to its proper position. It was done by a band of India rubber, assisted by the action of an inclined plane. That this would always occur was by no means probable; on the contrary he knew it would not; but it was liable to occur in individual cases, where the system was more than ordinarily susceptible to the action of irritants; and in such cases the teeth should be moved much more slowly than when no preternatural excitability of body existed. He wished to caution gentlemen in this matter. He had known the same thing to occur from the action of an inclined plane, when made to act too promptly upon a deviating tooth.

Dr. Forbes, of St. Louis, exhibited and explained an impression plate, the invention of Dr. Fairbanks, of that city, which attracted a good deal of attention.

Dr. Branch, of Illinois, exhibited his invention for producing local anæsthesia. He said some complaint had been made with regard to its operation; that he thought that was occasioned by the operator not understanding the proper method of applying it. He had found it a perfect substitute for chloroform, in those cases where he felt a desire to use chloroform. It was harmless in all cases where chloroform was most objectionable. He did not mean to say that it could be profitably used in all cases, but that it was of so much benefit that no dentist could afford to do without it. It was now in use in general surgery as a remedial and anæsthetic agent.

Dr. Dwinelle called on Dr. Wetherbee, of Boston, to state his method of preparing the mouth for the reception of an entire denture.

Dr. Wetherbee said that he had ever regarded the preparation of the mouth for the reception of artificial teeth as of great importance. In a very few words he would describe the mode he adopted some nine years ago, and which he pursued at the present time. Dr. W. then described his process, the peculiarity of which was, that in preparing his temporary plate, he allowed for the probable shrinkage of the gums. In some cases he attached springs, to be worn until the plate adhered. The result was, that at the end of the year, the plate set as well as the permanent plate would, the mouth was smooth, and when he introduced his permanent plate, it set very firmly indeed.

Dr. Austin, of Manchester, N. H., described a new invention for the application of cold air, to secure local anæsthesia. It consists of two or three cans, placed one within the other, the inner can being filled with ice and salt. and a pipe conveying the air to the mouth, which was forced up by an ordinary pair of bellows, worked by the foot, or in any other way.

Dr. Branch asked why it was called an invention for securing *local* anæsthesia.

Dr. Austin replied, that as soon as the air ceased to be local, the other air mingled with it and moderated its temperature.

On motion of Dr. Rogers, the discussion of miscellaneous subjects was suspended to hear reports from committees.

Dr. Dwinelle, from the Committee on Printing, appointed last year, presented a report which was accepted.

The same gentleman reported from the committee to whom was referred the communication on plastic gold, received a few days since from Dr. Weiber, of Paris, that the gold was about the same as manufactured in this country some six years ago, and rejected as not adapted to the wants of the profession, They recommend the Convention to confer an honorary degree upon Dr. Weiber, and to send him samples of gold manufactured in this country at the present time.

The report was accepted and adopted.

Dr. Dwinelle now made some remarks *strongly* condemnatory of the course pursued by a Mr. Gilbert, in patenting an improvement known by the name of the "Central Cavity Plate," and which he said had been used by the profession long prior to the date of said patent, also stating that one of their members, Dr. Potter, of Norwich, had been sued by said Gilbert for a violation of the patent, and that he thought an expression from the Convention of sympathy and aid to Dr. Potter was proper and just.

After some remarks from other gentlemen, fully endorsing the views advanced by Dr. D., resolutions expressing sympathy and offering aid to Dr. Potter were offered and carried with great unanimity and applause, but which, on subsequent action, was re-considered and laid upon the table, in consequence of the opinion prevailing that their action would lessen the weight of their evidence, as parties interested, in case any should be called upon as witnesses in the suit now pending.

Prof. Taft, in behalf of the Committee to whom was referred the essay by Dr. Westcott, stated, that in glancing over it hastily, they noticed that it was upon a subject which had not come before the Convention, and probably would not, and as it was predicated on the supposition that the subject would be introduced, that under these circumstances, they did not deem it important that the paper should be read to the meeting. The report was accepted.

Dr. Locke, of Nashua, said he had prepared some resolutions which he desired to present to the Convention, and which, if there was not time to act upon them at the present session, he hoped would be permitted to appear among its proceedings.

Whereas, We deplore, as much as the public can, the physical degeneracy of the human race in so-called civilized society, as manifest to the physician, in the enfeebled constitutions and the diminished stature, as to the dentists, in the narrowly contracted maxilares, and in the imperfectly developed dentures, which renders them the most irregular and defective in parts of speech known in the English language:—therefore,

Resolved, That in the opinion of this Convention, the causes of imperfectly developed and defective teeth, arise, first, from the violation of the physiological laws in the formation of the marriage union; second, from the want of a sufficient supply in our diet of the chemical elements which are needed to form *bone;* third, by too free use of acids in our food and drink; fourth, mainly from acetic acid, formed by fermentation in the chemical laboratory of the mouth and stomach from sugar, and saccharine matter in all its forms, and from most articles of food, when more is taken than is digested.

Resolved, That the remedies we now know of are, first, cleanliness of the teeth and mouth; and second, a temperate use of the coarser and more substantial articles of food.

On motion of Dr. Spaulding, the resolutions were laid on the table, to become a part of the proceedings of the Convention.

On motion of Dr. Straw, of Bangor, it was voted that when the Convention adjourn, it be until to-morrow morning, at 9'o clock.

[The Convention then, at half-past one, adjourned, and proceeded in a body to the steamboat which had been procured by the dentists of Boston and vicinity for the purpose of an excursion down the Bay. On the boat was found a band of music and a very liberal supply of refreshments, which was partaken of with keen appetites. During the trip down many speeches were made, and we are compelled to add, many stomachs relieved in consequence of—not the speeches or the clam chowder—but from a very peculiarly undulatory movement of the water. Notwithstanding these interruptions the boat reached "Nahaut," (where, it will be remembered, the "Sea Serpent" is occasionally seen,) when after a sojourn of some two hours, the party again embarked and made their way slowly up the Bay, touching at Hull, where a very *spirited* entertainment was given by one of the gentlemen of the reception committee, Dr. E. G. Tucker, of Boston. The boat was again manned, and on the way up to Boston, speeches were again in vogue, and "all the world and the rest of mankind" were called out; At 10 o'clock, P. M., Boston was reached, and the festivities terminated.]—*Ed. Dent. News Letter.*

FOURTH DAY—MORNING SESSION.

The Convention was called to order at quarter past 9. The Secretary being absent, Dr. Forbes, of St. Louis, was appointed Secretary, pro tem.

On motion of Dr. Taft, the reading of the minutes was dispensed with. The same gentleman then moved a reconsideration of the vote whereby the Convention voted to lay the consideration of miscellaneous business on the table, and the motion was carried.

MISCELLANEOUS BUSINESS.

Dr. Simonds, of Boston, addressed the Convention on the subject of extracting teeth. He said he had some experience in this branch of practice, that for the last six years, he had made it a rule to extract as many as it was necessary to take out, at one sitting. He had generally found that when he succeeded in clearing the mouth from carious teeth at one time, the patient got along better, and did not seem so much debilitated, as when the operations have continued from day to day until the mouth was cleared. He had extracted the full dentition, thirty-two teeth in one instance, at one time, and the patient got along without being sick. Frequently he extracted twenty or more at one setting, and never had had any bad consequence follows these operations. This was an operation, he conceived, which required a great deal more skill and judgment, than many were willing to admit. He thought it unwise to attempt to deceive the patient; if he wanted to see the instruments let him do so; make the operation appear as bad as possible to his mind, and then when it is over, he would be likely to say it was not half so bad as he expected.

Dr. Taft called upon Dr. Blakesley to address the Convention.

Dr. B. said, it seemed to him, that there was a definite way of getting at the matter of diseased teeth, and the remedy; and the thought had occurred to him, that it would be well for the Convention to institute a fund and employ one or more competent persons, whose time should be occupied in the analysis of the various grains and vegetables in their natural state, and after they were cooked, and see how the system is affiected by them. He was sorry to say, he did not know what a grain of wheat or corn, or a potato, contained; he wished he did; but he had no time to analyse them for himself, and wanted all this matter put into such a condensed shape, that in a few minutes he could ascertain all he wished to know. He was willing to be taxed from ten to fifty dollars a year to promote an object of this kind. (Applause.)

Dr. McElroy, of New-York, recommended Dr. Johnson's "Chemistry of Common Life," as containing all the information desired on this subject.

Dr. Taft, of Cincinnati, said this was a subject in which he had been very much interested, but it was only by accident that he ascertained that the thoughts of Dr. Blakesley and himself had been running in the same channel upon it. Every one could see the propriety of this, and the beneficial results that would accrue to the whole profession if Dr. B's suggestion was carried out. If he understood the idea, it was, that their society should raise a fund to sustain an experimenter for the benefit of dental science. They all had very many things coming under their observation, about which they were uncertain, and they resolved, at some time or other, to institute experiments, and find out the truth ; but that time never came. Take, for instance, decayed teeth. Did not the discussions of the last three days show that there was no fixed opinion with regard to the cause ? Yet it could be ascertained ; there was no doubt about it. The nature and cause of decay could be brought out, and based upon facts, so that they could all understand them, if some one would take hold of the subject, and work away at it until he had attained the truth of the matter. How many other things there were, about which there was the same uncertainty ! If this fund was raised, when such cases occurred, they could refer them to their scientific experimenter, and ask him to investigate them, and find out what was in them. Every one would see how a hundred good objects would be subserved by this.

With this object in view, Dr. Taft said he had drawn up a series of resolutions, which he thought covered Dr. Blakesley's idea. He read the first, as follows.

Resolved, That this Convention establish a fund for the promotion of Dental Science, with especial reference to the employment of some competent person or persons, to conduct experiments—physiological, pathological, chemical and hygienic—as connected with dental science.

Dr. Taft said, that by the appointment of this agent, they would all obtain more than any one, even under the most favorable circumstances, could. The position he would occupy would give him the command of resources, which no individual under other circumstances could command, for he could call in the aid of eminent chemists and other scientific men, all over this country and in Europe, who would be willing to lay everything they had at his service. Then the results could be published through whatever medium they desired.

Dr. Blakesley wanted this Convention to have the merit of originating this movement, carry it on in their own way, and publish the results in their own way.

Dr. Branch desired to second the motion, and back up with all the power he had what Dr. Taft had said on the subject. He presumed he had one hundred things in connection with his profession which he desired to investigate, but he could never find time to do it; and although he found these things treated of in books in a general way, he did not have them treated of in reference to his profession. They would save themselves and patients any amount of imposition, if this plan was carried out. They needed to have some one in their employ, whose decision in such matters would be authority—upon whose opinion, with regard to the action of certain kinds of nutriment upon the constitution and the teeth and kindred subjects, they could rely. He believed this was just what they wanted, and, as has been said on another and greater occasion, "he gave his hand and his heart to this vote."

Dr. Lord, of New-York, remarked, that with all due respect to the gentleman who had introduced this resolution, and to those who had advocated it, he could not see the propriety of it. If this society had been instituted twenty-five or thirty years ago, then such a course would have been much more consistent and proper, but now the field had been gone over, the science of chemistry had been very fully developed with reference to every branch of art.

Dr. Buckingham, of Philadelphia, opposed the resolution. He wanted one society in the country, where every man could come in and speak his thoughts, and when he went away, profit by what he had learned. He was afraid the plan proposed, if carried out, would restrict the freedom of the Convention.

Dr. Straw, of Bangor, suggested that it was easier to pass resolutions than to raise funds. He should like to know how they could raise a fund. They had no organization by which they could assess their members, and it seemed to him, that it was not proper to pass the resolution until they knew they could raise a fund in some way or other.

Dr. Kendrick, of Mississippi, favored the resolution, as a matter in which they could all take pride. He had often been gratified by hearing persons say, when speaking of dentistry, "Why, really, your profession is getting to be a scientific one." He did not consider it necessary that they should be an organized body in order to secure this object. There were thousands of dentists scattered through the country, who would be glad to contribute something to this end. It had been suggested, that men might come there and present their views, but it must be remembered that some of their ablest men were the poorest—their mind was their only capital—and they could not afford to suspend their business, and come and think for them. If they did so, it was no more than right that they should be paid for it. Dr. K. suggested that a circular should be sent to every dentist in the country, stating what they wanted to do, and requesting him to enclose a gold dollar or more, in a letter to the Secretary. in furtherence of the object.

Dr. Taft said there would be no difficulty in raising funds, if they decided to do it. They could easily find ten men who would give from ten to one hundred dollars a year. He hoped they would begin now, and they would have at the end of a year, one hundred results—for which he was willing to pay one hundred dollars—by which they could all profit. He was astonished that any man should think that the science of chemistry was now perfected, and had reached its culminating point, especially, when they came to bring chemistry to bear upon their profession, and saw how little was known on the subject, and began to open their eyes to the fact that they knew nothing at all. (Loud applause.) If any man knew all about it, let him tell it.

Dr. Dalrymple stated that Dr. Westcott, of Syracuse, one of their own members, was now preparing a work to show the different effects of the different kinds of food and condiments upon the teeth, and in the course of time they would see that work published to the world. It was to be in a condensed form, that every man could have it in his library.

Dr. Allport spoke in favor of acting upon the matter now. If they suffered it to lie over until next year, they would lose the benefit of one year's experiments. That was no small item; for every determined fact in their profession, not only accrued to their advantage, but increased the respect in which they were held by the community.

He wanted a man who would take hold of one particular thing, and devote his entire time to it, and was willing to pay his share of the expense. Then, if they found anything they wanted analyzed, let them put it into the hands of their analytical chemist, and let him investigate it and give his opinion upon it. He would not say they should sanction that opinion, but let him give them the result of his knowledge and experience, and they could judge whether it was sound or not. There were a great many chemists scattered over the country, most of them good, but their investigations did not point directly to the dental profession. They wanted to make a dental profession mark in this business, and the only way to do it was in the manner proposed by the resolutions.

Dr. Newton, of Worcester, thought they needed information on subjects that went behind those matters which were commonly supposed to comprise the whole of their profession. He disired, particularly, to see the physiological department of dentistry investigated. Fathers and mothers often came to them and asked what they should do to give their children sound and healthy teeth. He confessed that he did not feel competent to counsel what should be done, and he feared many of his professional brethren were not. Until they learned these laws,—laws of life as well as of science,—they could not attain that high standard at which they all aimed.

Dr. Buckingham explained that in the remarks he had offered, he did not object to the appointment of the Committee because he was opposed to the end sought to be gained, but because he thought it ought not to be brought into such a Convention as this. He had given as much money to advance his profession as his brethren, and he was willing to give, but he thought this was not the place for the introduction of the subject.

Dr. J. A. Perkins, of Rome, N. Y., said that he had long felt the need of something of the kind now proposed, and he hoped it would pass. If it did not bring in all it cost, he should be very much mistaken.

Dr. Fuller, of Portsmouth, N. H., desired to say a single word in favor of the resolution so ably advocated by Dr. Taft and other gentlemen. He would say, that although he was delighted to hear that Dr. Westcott had such a work in preparation, as had been alluded to, he still could not conceive of such a work, were it published to-day, as likely to benefit them in the investigations and discoveries that might take place before their next meeting, or in all coming time. He thought they could afford to employ a competent man, who had the ability to do the work, and he was in favor of starting the thing to-day, so that by next year they might have some report.

The question was then loudly called for, and being put, the resolution was declared adopted, there being but few dissenting voices.

Dr. Taft then offered the following resolution:

Resolved, That a Supervisory Committee of three from the profession in the United States, be appointed, whose duty it shall be to take charge of the whole matter, which Committee shall have its Chairman, Secretary and Treasurer; and it shall also be the duty of said Committee to secure the services of some competent person or persons, as experimenters, to commence their labors as soon as possible, and that the results of such labors shall be given to the profession as soon as obtained.

Drs. Allport, Taft, and Chandler, of Pennsylvania, spoke briefly in favor of the resolution. The last named gentleman said he was delighted with the proposition, for he thought it was the key by which they could arrive at the truth of certain questions which had been discussed in the Convention. He had become convinced that the destruction of the teeth was occasioned by the diseased condition of the saliva of the mouth; and by the analysis, by the experimenter it was proposed to appoint, of the alkalies and acids introduced into the mouth, they might arrive at the truth of the matter.

The question was then taken on the resolution, and it was adopted.

Dr. Taft then introduced the concluding resolution of his series, as follows:

Resolved, That such person be placed in the most favorable position, by the profession of the United States, for carrying out the objects of the previous resolution.

Dr. Taft said the object of the resolution was to pledge their influence and support to the gentleman who should be appointed to carry on these experiments, by aiding him in every way in their power. It was not contemplated that they should cease their experiments and investigations, but continue them as assiduously as possible, and give him such aid as they could.

The resolution was then adopted.

The President then announced the following gentlemen as the Committee to prepare business for the next session of the Convention:

Drs. Jonathan Taft, Cincinnati, Ohio; Chapin A. Harris, Baltimore, Md.; C. W. Spaulding, St. Louis, Mo.; Benjamin Lord, New York City; Elisha Townsend, Philadelphia.

On motion of Dr. Buckingham, the thanks of the Convention were voted to the dentists of Boston, for the courtesies which had been extended to the members, and for the excursion down the harbor yesterday afternoon.

Dr. Clark, of New York, addressed the Convention on the subject of tempering instruments. He said that one of the greatest difficulties he had realized, in thirty-five years of practice, was that of securing instruments of the proper temper, for the various operations they were called upon to perform. The instrument makers declared that no two dentists could agree upon this subject, and they therefore made their instruments for those who seemed to require the greatest number. The great trouble was, that dentists were in the habit of having their instruments almost all of the same temper. He had been in the habit, for a great many years, of making instruments of different tempers, and he would state what tempers he thought best. Every one, he presumed, knew, that if a piece of steel was heated red hot, and plunged into any cold body, it would be perfectly hard. It must not, under any circumstances, be overheated. A cherry red, or a little lighter than that, would be sufficiently hot to produce hardness. That temper they wanted for their files and chisels, with which they intended to chip off the enamel, for their burrs, with which they intended to cut the enamel, and for their scrapers, which they used on the outside of the teeth. That was all, he believed, they required hard instruments for. For excavators or scalers, after brightening the instrument which has been hardened, the temper should be drawn by carefully heating it, until it assumed a tolerably bright straw color. This could be used for cutting bone, brass, gold, or soft iron, or anything except hard steel. In addition to that, they wanted instruments much softer, for strength. Pluggers required great strength—they did not want them to alter their shape. The greatest strength was found in the true spring temper, perhaps a little harder than was used for carriage springs. This was obtained in small instruments, by carefully drawing the temper beyond the straw color, till it became a blue, and a little dirty in its blue—changed a little toward white, as if it was burning off its color; then they had a strong spring temper. This, Dr. Clark said, was an important matter, for all dentists were obliged to temper their own instruments, as they could not rely upon the instrument makers; and in this matter, he found a greater variety of opinion than in any other. If the steel had been burned, they might throw it away, for it could not be restored.

Dr. Straw, of Bangor, said he was glad to hear the gentleman from New York speak of instruments, because it was a matter that ought to be understood. The method he adopted to secure the proper temper for *small* scrapers, was to heat them just right, and swing them in the air very rapidly. It was not necessary to draw the temper at all; this gave the best edge they could possibly have. It would not answer for *large* scrapers, however, they became too soft.

Dr. Randall, of Farmington, Maine, said that he was so situated that he could not obtain instruments of a suitable temper, and had been compelled to manufacture them himself. After heating, as the gentleman from New York described, he plunged the instruments suddenly into a mercury bath, which produced the best temper.

Dr. Clark.—Is it not very hard?

Dr. Randall.—It is.

Dr. Clark.—Then it would be too hard for some purposes.

Dr. Priest, of Utica, remarked that a great deal of steel was spoiled by over-heating. To avoid this difficulty, instead of heating the steel with the lamp and blow-pipe, he heated a pair of tongs, and placed the small tools in them; in this way, there was no danger.

Dr. Clark.—I thank you for that information.

Dr. Lord, of New York, said he had found that one of the greatest difficulties in the way of success in dentistry, was the want of suitable instruments. The instrument makers did not understand their wants; the instruments they manufactured were those they *supposed* dentists wanted. He supposed a great many went to the instrument makers to procure their instruments, expecting them to be what they wanted; but they soon found their mistake, and that they must learn to make instruments for themselves, which he considered imperative for success. He thought one of the first things was to learn to make instruments, and adapt them to the peculiarities of a particular case. They did not need so many instruments, but they ought to be able to make them to hand, and they often were made thus, on an oil stone, or with a file, or with pliers, at any moment. He used an instrument with very little temper, for placing his foil; he wanted an instrument that would spring. He did not want it to bend, but he had rather it would bend and stay bent, than be rigid.

Dr. Straw said he had ascertained that it was necessary to hammer the point of an instrument before bending it—flattening the point upon two sides.

Dr. Miller said he wanted his light properly arranged, and then, with a good blow-pipe, he could do the work well. He did not heat the whole instrument red hot, only the cutting part. He heated it to a proper red and plunged it into soap or oil, and reduced it to a straw color. He could not buy such instruments.

Dr. Branch remarked that he learned from a watchmaker how to temper drills. He did it by holding a fine drill in the flame of a candle until it was properly heated, when he took it out and plunged it into the body of the candle. He used a sperm or stearine candle, which he thought preferable to a soft one. He believed he got a better cutting drill in that way than any other.

Dr. Clark said, that was the best temper for cutting steel, but he would not try it on brass.

Dr. Allport said that he was lately in the office of Dr. Rich, of New York, and he (Dr. R.) showed him his plan of bending instruments. He had adopted a system so that he always knew the exact curve of his instrument, and was never mistaken about it. Dr. Hawes, who was present, could explain the process better than he could, and he would ask him to do so.

Dr. Hawes said: In the first place, they wanted an anvil on which to shape their instruments. Purchase a hammer and make an anvil of it by inserting it in a base. Draw the temper, and make some half dozen angles on the anvil, one at 20, 30, 40 or 50 degrees, as they wanted the angles of their instruments; then, with a die, number the angles 1, 2, 3, and so on. Then, when that is complete, and the angles made perfect, and the anvil brought to a proper polish and finish, they would temper it again. Then, in order to shape their instruments to a proper angle, they had nothing to do but to lay them on the anvil, hit them one little tap with a hammer, and the thing was done. Then take a die and mark the instruments No. 1, 2, 3, and so on, to correspond with the numbers on the anvil, and they knew just what instrument they took up, and if it was too straight or too much curved, they could instantly, by referring to the number, know the exact instrument necessary for their purpose.

Dr. Buckingham remarked that he had adopted a very simple process for drawing the temper of steel. He took a piece of gas pipe or an iron tube, say a quarter of an inch in diameter, filled it with charcoal, and put the point of the instrument in this, then laid it upon a piece of charcoal, and heat it to a red heat. There was no danger of injuring the steel in this way; it was almost as pliable as iron wire, and could be bent at will. To get the proper temper, he had used various substances, but common brown soap was as good as anything. He heat the instrument up, put it into the soap, and then heat up again—the soap would hold the heat—and then plunged it into some cold substance. This protected the steel from oxydization. With small instruments he put the point against a piece of steel, let the flame come up, and then, when he got the color he wanted, plunged it into water.

Dr. Clark said he had invariably found that if he heated his steel and cooled it, no matter how, it was always perfectly hard. He could not see any appreciable difference between water, oil or soap. It was sometimes troublesome to get instruments clean, but they could be cleaned in sulphuric acid. Early in life, before he thought of dentistry, he was told that if he wanted to keep a piece of steel handsome after it was hardened, he must envelop it in soap, which would clean off and leave the steel perfectly bright.

Dr. Leach said he was trained as a blacksmith, and he was proud of his early training. [Applause.] He had worked months and months on nothing but steel, and knew something about it. If they took a piece of steel, and made a slight mark across it with a coarse file, they took from its strength more than they would if they cut down the whole instrument to that size; the whole spring was brought over one point. Hence it was important that every instrument should have as polished and smooth a surface as possible, and that the angle should not be too abruptly turned; an angle turned with a perfect corner was not so strong as one that had a slight curve. In forming steel into instruments, as true a taper should be carried back from the cutting point into the socket or handle as possible, so that the strain will become gradual all along down to the point. If a shoulder was cut down to get a small size, the spring closed at that point, and a strain wrenched it off.

Dr. L. thought the best method of getting a spring temper had not been described. After getting the steel to a proper hardness, as they would for a cutting instrument, if they wished to get a low spring temper, put upon it common wax, and hold it till that burns off, and the flame ceases. If a higher temper was desired, use sperm oil, which burns a little quicker ; and if a still higher temper, sweet oil, and the moment the blaze ceases, plunge it into water. In getting a spring temper, it was important that every part of the metal should be alike heated in drawing the temper, for if there was any one part more heated than another, the part not so much heated would break suddenly, because that would not yield while the other would.

Dr. Forbes, of St. Louis, said he had been convinced by the remarks on the subject of tempering steel, of the propriety of appointing an analytical chemist. Not a word had been said about the chemical properties of steel; why overheating steel destroyed it; what effect heating cast steel over a cherry red had upon it; why cast steel alone was destroyed by overheating, while German steel could be heated to a white heat, and plunged into water without being spoiled. There was only one method of properly tempering steel; if they all understood the effects of heat and cold ? How was iron changed to steel? By carbon being incorporated into its pores. Why was steel made hard by heating and plunging it into oil, etc ? By the additional incorporation of carbon. The pores of the steel being opened by heat, the carbon is taken up, and the heat being suddenly checked, it was held there. Then, by opening the pores of the steel, and suffering the carbon to escape, they got just the proper temper. If this was well understood, they would all get just such instruments as they wanted.

Dr. Branch, of Illinois, then submitted the following resolution :

Resolved, That the Supervisory Committee be requested to invite all members of the profession throughout the United States to participate in this movement, by contributing one dollar or more to the furtherance of the object.

Dr. Branch briefly advocated his resolution. This was a Democratic Convention, and the work was a Democratic work, and he wished every member of the profession to have the opportunity of contributing to the object. He thought the day would come when they would be proud of being engaged in this work, and posterity would bless them for it.

Dr. Kendrick, of Mississippi, submitted the following as a substitute for the resolution of Dr. Branch:

Resolved, That the Committee of Dental Investigation be requested to invite all members of the Dental Profession in the United States to contribute one dollar or more, together with any facts in their possession, calculated to further the objects of this movement.

Dr. Branch accepted the substitute, and it was adopted.

The President then announced the Supervisory Committee as follows—Drs. Blakesly, of Utica, Taft, of Cincinnati, and Buckingham, of Philadelphia.

A motion to adjourn *sine die* was then made, but was not at once put.

Dr. Fuller, of Portsmouth, said he desired in a few words, to recommend the use of atmospheric plates for the insertion of a few teeth or a single tooth. He had employed them exclusively for two years, in every case where it was possible to do so, they gave the patient sufficient strength to masticate, and he was every way satisfied with the result.

Dr. Straw, of Bangor, gave an account of his manner of swaging plates. After cutting his male die, he imbedded it in sand, packing it down snugly as high as the labial edge; he then made his female die upon that; consequently, he got nothing but the central portion of the plate. He then put on his plate and struck it down, striking nothing but the center, which goes down in two minutes. He then made another cast in the common way, and carried down the edges, previously, however, slitting the front part of the plate. He, also, if he found a prominence of the labial ridge, near the cuspids or bicuspids on either side, slit that, and carried the edges down; in two minutes more it was all done.

Dr. Ostrander explained an alcoholic lamp which he used, having a double tube, one of which is moveable, to slide in or out. He slipped the slide inside the tube, covered it up, and the wick never clogged.

Dr. Fowler, of Yarmouth, Mass., explained a new blowpipe, invented by Dr. Lawrence, of Lowell, which he said was exceedingly simple and very cheap.

Dr. Allen, of New-York, expressed his regret that the subject of artificial dentistry had not been brought up. It was an important branch of the profession, and one well entitled to their consideration. He hoped that a place would be assigned for it in the discussions next year, and that it would not be set aside.

Dr. Coates, of Virginia, explained his method of restoring gold. He had been in the habit of using the gold made by Jones, White & McCurdy, and it did not matter how far it had traveled, or how much it had been crumbled and knocked about he brought it back to the same condition in which it left the hands of the maker. He had a little platina pan, about the size of a seidlitz powder box, or a sheet of gold foil, which was set in a frame over a spirit lamp, with sufficient heat to boil it full of water in a very few moments. Ascertaining what quantity of gold would be required, he took the requisite number of leaves and immersed them in this bath of boiling rain water, in which he had put about 40 drops of sulphuric acid. On removing them from the bath they would dry instantly. If it was examined by a microscope it would be found to have a pure and clean surface. They would find it work as well as any gold could. He dipped it into the solution in the rough condition. If examined carefully by the microscope before putting it in the bath, it would be found that it had become filled with all sorts of foreign substances; and that was one reason why it was so difficult to make it adhesive. The annealing process did not take off all this foreign matter, but the bath did.

In answer to an inquiry, Dr. Coates said, that he put in only just so much as he intended to use at the time, for he held that gold would receive impurities from the atmosphere. (Applause.)

Dr. Forbes offered the following resolution, which was unanimously adopted:

Resolved, That the thanks of this Convention be presented to the Reporters, for the able and impartial manner in which they have reported the proceedings of this Convention.

The Secretary pro tem. then read his minutes of the forenoon's proceedings, which were approved.

Dr. Wetherbee, of Boston, explained his method of inserting teeth upon healthy stumps. Instead of inserting the wooden pivot directly into the stump he filled part way down with gold, and inserted the pivot into that. In this way he preserved the stump in a healthy condition, as no moisture could possibly enter. Stumps treated in this manner would last for a great number of years. Sometimes he used a metallic cylinder, which was surrounded by gold, and thus avoided the use of wood entirely.

Dr. Forbes remarked that he was conscientiously opposed to pulling teeth. In some cases he forced a piece of gold wire down to the apex of the tooth, and left it there; then filled up the fang with fibrous asbestos, and the crown with gold. His operations in this way had been successful.

Dr. Newton recommended the use of nitrate of silver for cleaning out the fangs of teeth.

Dr. Miller stated, that on one occasion he was called upon to insert a plate in the mouth of a young girl 16 years old, and the mouth being very small, she was unable to retain it. The thought occurred to him that he would cut the frænum labiorum, and see what effect that would have. He raised the upper lip, took a pair of scissors, and cut it the depth of a quarter of an inch. It was done very quickly. He found also some difficulty with the buccal muscles, and, raising the cheek, cut them in the same way. After the operation was performed, he placed the plate in her mouth, and it adhered quite firmly. By way of experiment he attached a weight to it, and found it would hold four pounds six ounces. He had performed this operation since, a number of times, and had never had any trouble. The incision might bleed freely, but that could be stopped by the application of tannin or some other remedy. Dr. M., in reply to a question with regard to the safety of this operation, said he believed it was perfectly safe, but he should not resort to it unless obliged to.

Dr. Asay said he had found the same operation assist him very much indeed; but he thought it necessary to use a great deal of caution, and not cut too much. He had seen it have a very injurious effect upon a patient.

Dr. Miller remarked that he had never seen such a case.

The business of the Convention having been finished, the President, Prof. Taylor, rose, and spoke as follows:

GENTLEMEN.—We are now about to separate. We have had—at least, it has seemed so to me—very interesting and instructive sessions. But I really feel—and I think it is borne out by the discussions of this morning—that we do not allow members sufficient time for these annual convocations; that we come here unprepared in our arrangements to spend such a length of time as we find that the business of the Convention demands. Indeed, you have brought to my mind this morning, the old maxim, that we are *wedded* to our profession; and I have felt, whilst listening to the remarks that have been made, even since the motion was offered to adjourn *sine die*, that you would linger as the lover lingers with his sweetheart, after the parting kiss had been given, returning again and again. (Loud applause.)

My object in speaking at the present time, is, merely to say to you, that when we see you in the Queen of the West—and I hope, gentlemen, (may that hope be realized !) that we shall see each and all of you, and not only you, but your friends and better-halves,—we shall give you a cordial greeting. Our city is large; the beautiful Ohio meanders close to our borders; we have every means for your accommodation and pleasure; and in behalf of my professional brethren of the West, I take this opportunity to say, we pledge you a hearty welcome. [Loud applause.]

The Convention then, at five minutes to 1 o'clock, P. M., adjourned *sine die*.

Miscellaneous.

FILLING LABIAL SURFACES OF UPPER INCISORS.

BY A. J. VOLCK, D. D. S.

I beg leave to submit to the profession the description of an operation, which, having been suggested by Professor Maynard, of Washington, I have tried in a number of cases and found of such importance, that I believe its publication in your valuable Journal will be acceptable to the careful operators of the dental profession.

This operation consists in setting a piece of enamel in the cavity of a decayed tooth, when such a cavity is exposed to the sight, thereby avoiding the ungainly appearance of gold fillings in the front of the mouth. The only cases in which I have as yet applied this method were in cavities in the anterior surface of front teeth. It is done by fitting a piece of enamel into the prepared cavity loosely, walling it into the same by a continuous ring of gold foil. The narrower, of course, this gold ring can be made, the more perfect will be the deception. In the first operation of this kind that I attempted the width of the gold ring is about equal to the thickness of a five cent piece; even in this case the improvement over the large gold filling which had previously disfigured the tooth, is striking, and made me hope for much satisfaction from future practice. Having since become more adroit in this operation, I have accomplished fillings in which the rim of gold is not thicker than a small main spring. These fillings are barely preceptible to any but the closest observer.

In preparing the cavity for this purpose pains are taken to have the walls perpendicular and the bottom of it perfectly even and flat, avoiding if possible rounded edges, which would make the gold ring appear thicker than it actually is. In cases where the cavity is deep it may be partly plugged in the common manner, and a bed thus formed on the bottom of the cavity for the reception of the enamel. The enamel must be fitted so as to correspond precisely with the shape of the cavity, having also perpendicular sides and allowing sufficient room between it and the walls of the cavity for the filling in of the gold. Around the sides of this patch of enamel a small, barely perceptible, groove can be cut with a sharp file as an additional security for the stability of the gold filling. To fasten this enamel patch in the cavity, my way has been, to wrap around it a strip of No. 4 gold foil of sufficient thickness to fill up the space between it and the sides of the cavity, leaving the strip wider than the enamel so as to allow for condensing and finishing the plug; this I passed gently into the cavity, assisting on all sides with a small and very thin plugger, so as to make the gold arrive with the enamel at the bottom of the cavity—after it has been inserted in this manner, the gold plug can be condensed and finished as any common filling. The best material for the enamel will be found to be the porcelain of which artificial teeth are made—a piece of common plate tooth of the proper color has answered to perfection. This enamel is easily finished down with corundum slabs and polished with an Arkansas stone.

I have taken occasion to show some of these fillings to prominent members of the profession, and have been gratified by their approval and encouragement. There is no reason why these plugs, if properly done, should not stand the test of time like any other good filling, and there can certainly be nothing more gratifying than their appearance.

In many cases gold fillings in the most prominent part of the mouth disfigures an otherwise beautiful face, and the time and care expended in this operation will amply repay a careful operator in the satisfaction and gratitude of his patients.—*Am. Journal of Dental Science.*

BIOGRAPHICAL SKETCH OF PROF. J. T. SHOTWELL.

The medical profession offers to its members, when faithful to their duties, not only extraordinary means and opportunities of obtaining the respect and esteem of the cultivators of science, but also of acquiring the warm atttachment and affectionate gratitude of a circle of friends, more or less extensive, in proportion to the extent of their practice. This, although one of the most desirable blessings of life, is, to the physician, frequently the cause of its premature termination. Of these remarks, the subject of this sketch furnishes a very significant example.

John T. Shotwell was born in Mason County, Kentucky, on the 10th of January, 1807. His parents were immigrants from New Jersey, at an early period in the history of the West, and were among those who established its character as the home of hardy, brave, enterprising men of indomitable perseverance; and of kind-hearted, true-hearted, womanly women.

His father was a farmer during the early period of the life of his three sons; and his example, as well as his precepts, laid a foundation in their characters for the industrious habits in their several professions, by which they were distinguished.

A love of literature in early life, was remarked in the character of John, the eldest son, and his father determined to give him the best opportunities which the West afforded for the cultivation of this taste. This, with other reasons, induced the removal of the family to Lexington, where he entered the Transylvania University in 1822 and graduated in 1825, with so high a reputation for scholarship, that the late Dr. Drake, with that appreciation of character by which he was distinguished, was desirous to have him embrace the medical profession, and offered all the aids and advantages within his control, to qualify him for that excellence which he foresaw awaited him in that profession.

He entered the office of Dr. Drake in 1826, and continued his pupil until 1830, when he became his partner. His health having been impaired during his pupilage by too incessant devotion to his studies, he was induced in the spring of 1829 to try the effects of a journey in a more southern climate for its restoration.

He went first to New Orleans, and from thence journeyed on horse-back through several of the Southern States and the Indian Nation. This journey, although attended with much fatigue and exposure, greatly improved his health ; and his habit of observation, and of making the result of his observations practically useful in the principal pursuits of his life, added strength to his mind in proportion as exercise in open air added to the strength of his body. He became a graduate of Medicine at the Medical College of Ohio in 1832, and having dissolved his connection with Dr. Drake, he commenced practice with the advantages derived from that connexion and the reputation he had already acquired; and when the cholera visited this city, in that year, he became most extensively known as a successful practitioner, and as characterized by that amenity of disposition and anxiety for success in his treatment of cases, which convert patients into friends, and inspire that confidence which facilitates the labors of the physician, as well through a strict observance of his directions, as from the curative influence of faith and hope.

He married in 1832, Miss Mary Ward Foote, daughter of John P. Foote, Esq., of this city, and during the remainder of his life, displayed those amiable qualities as a husband which won so strongly the attachment of all who knew him, both as a physician and a man.

In the year 1832 Dr. Shotwell was appointed adjunct Professor of Anatomy to his friend, the celebrated Dr. Cobb who then occupied the chair of Anatomy in the Medical College of Ohio, and whose fame as a teacher of that science was rapidly extended throughout the United States, and excited competition in other institutions to obtain the advantages of his talents. Among the offers of chairs made him in other cities, he chose to accept that of the Medical Institute at Louisville, Ky., in which he remained until his bodily health became so affected by his labors as to necessitate an abandonment of the duties of a medical instructor. His resignation of the professorship he held in the Medical College of Ohio was followed by that of all the other professors except Dr. Locke, who was in Europe at that time, and Dr. Shotwell who was appointed to succeed Dr. Cobb.

He commenced his lectures on Anatomy at the session of 1837–8, and except for one session, continued during the remainder of his life, among the most highly esteemed members of the Faculty; increasing annually in reputation, and in the power of aiding the attractions of the institution which he adorned.

The strong inclination to devote his practice exclusively to surgery, which would naturally be developed by devotion to the duties of his chair, induced him, in 1842, to visit Europe for the purpose of learning from the celebrated surgeons of France and England, any improvement which their extensive practice had enabled them to make in their profession, a knowledge of which would be useful to him as an operator. He considered that his journey had been successful, and that the advantages thus obtained were a full compensation for the loss of time and expense of the journey.

For the purpose of relinquishing all except surgical practice, he formed a partnership with his former pupil Dr. H. E. Foote, intended to be relieved, by this association, from as much of his ordinary regular practice as possible. Had he been permitted to carry this plan into *full* effect, his valuable life might perhaps have been spared. But during the cholera season of 1850, his regular patients would not dispense with his attendance, and many others, in their anxiety to obtain his services, added to the fatigue, labor, and exposure he was compelled to undergo. His own health soon yielded to his solicitude for the health of others, and one evening, on his return home from a very arduous series of labors, he found himself unable to do more, and went to bed with a determination to take that rest which he found had become absolutely essential to the preservation of his power to continue his usefulness. Foreseeing that calls would be made upon him during the night, his family determined that all of them should be dismissed without his knowledge. This was done with several applicants, but at length one of them insisted so strongly on seeing him, and asking at his bedside for advice in the case of his wife whom he considered in a peculiarly dangerous condition, that he was permitted to do so, and being there, he represented to the doctor that the life of his wife depended on seeing him—that her confidence in his skill was such that the mere sight of him would be more efficacious for her recovery than any medicine that could be administered. The doctor could not resist this appeal, and left his bed, to which he returned after his visit, but never left again. In the eloquent memoir of him, by his attached and steady friend Dr. J. L. Vattier, the following statement is given of the commencement and termination of his disease:

"On the morning of the 14th of July he visited the Hospital.

On his way home, finding himself quite unwell, he called at my house to rest himself. He looked pale and haggard: remained twenty minutes and left for his home. That night he was summoned to attend a patient on Third street, and while preparing for the visit, was assailed with unmistakable symptoms of cholera. He, however, attended the call, and while yet at the house of his patient, the symptoms becoming more aggravated in their character, he was forced to resort to medical remedies to enable him again to reach his home.

The next morning his friend, that excellent physician, Dr. Walcot Richards, was summoned to attend him, and continued to have the principal charge of his case up to the time of his death. I saw him frequently, as did many others of his numerous friends.

His disease assumed a malignant character, and he was for a while considered in imminent danger; at last, however, medical skill obtained the mastery, and he commenced to convalesce, and continued to do so for several days. He was patient under suffering, and looked forward with hope to a speedy restoration to health, but this hope proved false, for with him all life's scenes were fast drawing to a termination. The improvement in his condition was not destined to be permanent; reaction became too violent: congestion of the brain set in, and though every means was resorted to that medical skill could suggest, death closed the scene at 11½ o'clock, P. M., on the 23d of July."

His death was regarded as a public calamity by all classes of citizens; and a stranger, on seeing the immense assemblage at his funeral, anxious to pay the last tribute of affection and respect, would have understood that a great man had fallen, and if he had inquired what manner of man, and who it was that had such power after death over the hearts and feelings of such a multitude, he would have been told that a good man was lost to a numerous body of friends, who justly appreciated his virtues and talents; that a heavy affliction was laid on the poor who had experienced their benefits, and that the science of medicine had lost one of its most promising cultivators, in the death of John T. Shotwell.

From among the numerous Obituary Notices called forth on the occasion, we select the following as expressions of public feeling, and testimonials of the power which a physician who fulfills the duties of his profession with diligence, and in a Christian spirit, will obtain over the affections of all who know him; and of the deep regret which attends the loss of one so useful and so free from all suspicion of any taint of selfishness in his character.

Death of Dr. John T. Shotwell.—Our city was thrown into general gloom yesterday upon the announcement of the death of the eminent man whose name heads this article, and expressions of sorrow fell from every lip when the mournful tale was told. The rich and the poor, the high and the low, had the tribute of a tear, and coming from hearts warmed by kindly recollections, these tears told a more expressive tale of deeply implanted grief, than could the plumed pomp and sable pageant that attends upon the demise of the loftiest in the land. For him sprung the sorrow of the soul, and the fountains of heart-born grief gave out their tribute to pure worth, while charity stood beside the breathless corse and wept for the like she will never look upon again.

It is needless to dwell upon his virtues, for they are written upon the hearts of all who knew him, and he made the indelible stamp of a MAN upon the minds of all with whom he associated. Endowed with an extraordinary degree of strong common sense, and having an intuitive knowledge of human nature, he endeared himself to all, whether socially or professionally, and a moment's acquaintance was the foundation of a life-time love. The poor hovel of poverty shared his kindly attention alike with the glittering palace of affluence—and hundreds will weep as the solemn funeral train passes to-day, even as the loving child bends under the affliction of a father's loss. Like the Angel of Mercy, it needed but the voice of pain to arouse that good old heart of his,—a heart whose sympathetic responses were not awakened by the sordid prospects of worldly gain. He was a man of the world in one sense, but in another sense, a man whose endearing attributes elevated him above the wiles and the ways of the world. He was all that God may make of man, and may He to whom humanity bends the knee for mercy, hear the prayers that ascend from many a heart to-day.—*Commercial.*

Dr. Shotwell, a well-known and respectable physician of this city, died yesterday morning. He was a man in high esteem, in this community, of rare medical attainments, and enjoyed an extensive practice in the line of his profession. His loss will bring sorrow to hundreds of hearts, and leave a vacancy in the ranks of the medical profession, which years will not suffice to refill.—*Atlas.*

Dr. John T. Shotwell.—The announcement of the death of this universally popular physician and man, under the Obituary head in another column, will be read with emotions of the deepest regret by those who have not already been grief-stricken with the sad intelligence through other channels.

The death of Dr. Shotwell has cast a deep gloom over the whole community, and well it might, for perhaps no man was more generally known or endeared to a larger circle of acquaintances. His innate goodness of heart, his social qualities and winning manners had rendered him universally popular. There was an atmosphere of good nature, warm and generous impulses always surrounding him, which made him the favorite of every circle. His presence and kind manner always brought a cheering ray of sunshine into the sick-room—and the despondent patient caught an inspiration from his presence—a cheering hope that was worth more than a score of ordinary prescriptions.

Dr. Shotwell has been known long and well as a skillful and highly successful practitioner of medicine,—and a popular teacher of his favorite science. During the long period in which he filled the chair of Professor as one of the faculty of the Ohio Medical College, he was universally popular with all classes of students, and was as general a favorite in the lecture room, as in other walks of life.

His untimely death, in the fulness of the noon of life, has created a void which can not be filled, and those to whom he was endeared will not soon forget the many good qualities which made him cherished by a host of sorrowing friends.—*Dispatch.*

[During the sessions of 1848–49, and 1849–50, Prof. Shotwell occupied the chair of "Anatomy and Physiology," in the "Ohio College of Dental Surgery," and, by his urbanity of manner, and his zeal and energy as a teacher, he made a favorable impression on the hearts of his pupils and fellow professors, which can never be effaced.

> "Time but the impression deeper makes
> As streams their channels deeper wear."

His heart was so fully impressed with the importance of the science which he taught, as lying at the foundation of all medical knowledge, that, whether his class was large or small, he manifested the same untiring energy. Having attended his lectures in the crowded classes of the "Medical College of Ohio," and again in the smaller classes incident to dental schools, we can bear ample testimony on this point. His pupils, whether medical or dental, will not soon forget his teachings.]—*Eds. Reg.*

Editorial.

THE AMERICAN DENTAL CONVENTION.

The Third Annual National Convention of Dentists, was held at Boston on the 4th, 5th, 6th, and 7th of August.

To those who were there, anything we might say here would only mar the pleasant recollection of the good time they enjoyed, and to those who were not there, it would be difficult to give anything like an accurate idea of what was done.

The Convention met at 12 o'clock M., on Tuesday, and proceeded at once to the election of officers, which was soon done,—with rather more dispatch, than heretofore.

The topics presented by the executive committee for discussion were good, and of much importance to the dentist.

These points were taken up and pretty thoroughly discussed, at least so far as time was concerned. Many of the members engaged in the discussions with considerable zeal and at great length.

The saleratus question was put through by day-light. It knocks the "*goose question*" into fits.

The discussions in the main were very interesting, especially the descriptions of various operations and processes. Much, no doubt, was learned by all, from these discussions and descriptions.

The time was limited to ten minutes, and many were thus cut off from giving full descriptions. We do think, that in these meetings ample time should be given to every one who has anything *new or interesting* to bring it forward. And in order to do this the session should continue at least one week

We would venture to suggest that it is not best to have protracted repetition, either by one or a number of persons. It would probably be better if the spirit would not move too many men to speak at the same time,—move one at a time and move him *effectually*.

That trip down the bay on Thursday afternoon. Oh, what a time! The Boston dentists will long be remembered for it. Scarcely, in the absence of ladies, did any crowd ever enjoy themselves so well. The good boat, a fine captain—the pleasant sailing—the ample provision for the inner-man, in the way of refreshments, and—and—and *fishing* and Nahant *of sea snaix* notoriety, and getting stuck fast in the *mud*, and Hull, and the good things Dr. Tucker had and made common, and the glorious music, it was the finest that is made. The sailing round the bay by moonlight, entranced by sweet sounds, etc., etc.

To the Boston dentists thanks and honor, for the numerous exhibitions of kindness and generosity manifested to those of us who were strangers and sojourners there.

The Convention met on Friday morning, and after some discussion on practice; and another matter which we notice elsewhere,—adjourned, and will meet at Cincinnati on the first Tuesday of August, 1858. And we hope every man will come prepared to keep the ball in motion till Saturday evening.

FUND FOR THE PROMOTION OF DENTAL SCIENCE.

The American Dental Convention, which met at Boston, in August last, considered and passed the following resolutions:

Resolved, That this Convention establish a fund for for the promotion of Dental Science, with especial reference to the employment of some competent person or persons to conduct experiments—physiological, pathological, chemical and hygienic, as connected with dental science,

2d. *Resolved*, That a supervisory committee of three from the dental profession in the United States be appointed whose duty it shall be to take charge of the whole matter. That committee shall have its chairman, secretary and treasurer. It shall also be the duty of that committee to secure the services immediately, of some competent person or persons, as experimenter, who shall as soon as possible begin his labor. And that the results of such labors shall be given to the profession as soon as they are obtained.

3d. *Resolved*, That such person be placed in the most favorable position by the profession of the United States for carrying out the objects of the first resolution.

Every one will perceive at a glance, the objects aimed at in the above resolutions. It is to open up the hidden treasures of the collateral sciences, and make them tributary, more than hitherto, to the dental specialty, and to bring to full view, things that have as yet, been seen only in the dim and uncertain twilight, as well as to bring forth, from total obscurity, agents, processes and principles, that shall develop our young science with far greater rapidity and certainty than heretofore.

There are many things in the practice of our profession involved in uncertainty and obscurity. Many have been the efforts of practitioners, to execute experiments for the purpose of bringing out and demonstrating, the truth or fallacy of something about which they have long been in doubt. And yet how few succeed in accomplishing anything, in that way. And it would be wonderful indeed if much should be accomplished. I suppose it to be a safe estimate, that nineteen twentieths of all the experiments thought of and attempted by dentists, prove total failures, so far as the desired result is concerned. Under the circumstances it could not be otherwise. I do not think it is disrespectful, nor slandering the profession, to say that the great majority of them are not competent just at once and without considerable preparation to go to work, and efficiently, introduce, conduct, and successfully terminate, pathological, chemical and hygienic experiments. Again, none with a good practice on his hands has time to devote to these things sufficient to accomplish much, and the dentist who has not a good practice—especially if he has been at work long—would not bring out much by experiments for other reasons. The man of great business and industry, though he might attempt numerous experiments, would find himself interrupted at every turn, and in nine cases out of ten these interruptions would prove fatal to the object, and the experimenter become discouraged, and in future though he thinks of many things he rarely ventures upon an experiment, remembering his former disapointments. Many experiments require long time, and close attention, to secure a happy termination.

The expense in carrying on a series of experiments in the departments named is a heavy item, and all can aid one or two men in doing that much easier than each one can do the whole for himself.

Every one has many experiments that he wishes to see carried out, and he thinks, "as soon as I get time I will." Nine-tenths of these never get out of the brain, where they are conceived, and those that do get out seldom amount to anything.

It is not supposed for a moment, that by the above arrangement every body is going to quit studying. By no means. Every one will do all he can, and be encouraged to do more thinking than before, from the fact that if he has but time to sprinkle his thoughts on paper, and send that to the committee or experimenter their value will be at once thoroughly and efficently tested by careful experiment. In this way, the originator will secure full credit for the suggestions.

This enterprise is wholly at the command of the dental profession of the United States. The person employed will be wholly at your command gentlemen of the profession, at least, so far as you sustain the enterprise, and the result of his labor is your property.

That committee should feel the responsibility of the trust imposed upon them, and select one who is as thoroughly competent, to the trust as possible, and one in whom the profession can repose confidence for the faithful performance of the duty,

We would suggest that the names of all the contributors be published.

This is an enterprise in which we hope the whole profession will take a deep interest, and aid by their contributions and suggestions, equal to the importance of the subject. T.

ADHESIVE FOIL,—BY ARTHUR.

By the politeness of Messrs. Jones, White & McCurdy, we have received a copy of Dr. Arthur's treatise on adhesive foil.

The Dr. has exhibited a perseverance and energy in the pursuance of his favorite subject, that is truly commendable, and in the results obtained has outstriped anything that had been thought of before in regard to foil.

Dr. Arthur does not claim to have done more than some others *could* have done, but he has done what no one did before. In the work before us the Dr. has given his method of working adhesive foil; he describes the instruments and the method of using them; the various kinds and conditions of the adhesive foil, and the manner of using the different varieties. Also the difficulties that present themselves, and the manner of overcoming them. We esteem this as a valuable addition to our library; it is especially valuable because it *is on one* important point, and investigates that thoroughly.

We all like the man of one idea, who can set himself down to one point, for then we expect something will be accomplished, and we are not often disappointed.

This is a work that no operator can afford to do without. It is written in Dr. Arthur's happy style.

It is "*got up*" in Jones, White & McCurdy style. *Nuff ced.*

It can be procured of Jones, White & McCurdy, and of the agents, or those selling their goods.

THE DENTAL SCHOOLS.

Before our next issue the various Dental Colleges will be in full blast. We have already noticed the change in the faculty of the Ohio College. A still greater change has occurred in the Pennsylvania College. Prof. Arthur and Parry are no longer connected with the school, and Prof. Townsend has retired from active duties in it. We have not the pleasure of a personal acquaintance with all of the new incumbents, but we wish them a glorious success. We have not yet seen the announcement of the Baltimore College, and cannot say whether any changes have occurred or not. We hope all three will be well patronized. "We speak that which we do know," when we state that every man who holds a chair in any of the above named faculties does so at a pecuniary sacrifice. It is hoped that this will not always be the case. It should not be, for the best men in the world will tire of any labor, however useful it may be, which is neither appreciated nor paid for.

PROF. SHOTWELL'S PORTRAIT.

For the beautiful and accurate portrait of Prof. Shotwell, which is found in the present number, we are indebted to our friends, the proprietors of the "CINCINNATI MEDICAL OBSERVER." This likeness is so accurate, that while gazing on it we fancy we can almost hear the eloquent lectures of our late beloved teacher. We could not think of a neater compliment to our patrons than to give them the portrait of one who was so early and earnestly identified with the cause of dental education in the West. We hope each subscriber will see that it goes down to posterity bound with the present volume of the Register.

REPORTING DISCUSSIONS.

It is always difficult to obtain a *satisfactory* report of the discussions of a public meeting. A verbatim report is generally too voluminous, and, by the way, is not the most likely to satisfy the speakers, as few men like to be reported exactly as they speak. A special difficulty in our profession arises from the fact that professional reporters do not understand our professional terms, and therefore, frequently make mistakes. It is altogether impracticable to submit the report to the revision of all concerned, and even if this could be done, mistakes would occur. As all can not have an opportunity to revise their remarks, it is but fair that none should. For our own part, when we go into a public discussion we make up our mind to be represented correctly, incorrectly, or not at all, as the case may be. We could not ask the privilege of revising our remarks when we knew others could not have it. It might be very desirable to have them revised, but courtesy to our brethren would require us to forego the pleasure of appearing to better advantage in print than they, when this must be attained by secretly availing ourselves of a privilege which they have no opportunity to enjoy.

AUTHOR OF DENTAL WREATH.

In the list of contributors to the last volume of the Register, for want of the name, we inserted, "Author of Dental Wreath." This occurred immediately after the name of Dr. Chas. H. Roberts, and led at least one person to suppose that it was intended to convey the impression that he was the author of the poem. The period after the doctor's name shows plainly that he is considered one contributor, and the "Author," another. The author of the WREATH is a WOMAN, and her manuscript was by far the neatest that has come into our hands, in our short editorial career. We don't know who she is.

"JOHN PHŒNIX AND THE DENTISTS."

Many of our readers have seen John's account of the late dental excursion to Nahant. We have a right to complain of John. Most people regard his effusions as good natured caricatures, and he should be true to himself in this respect. His account of the valorous "charges" of the profession are in perfect accordance with his general character; but what right has he to approximate the *sober truth*, in the same connection, as he does in the expressions, "every man with a cigar in his mouth." "I observed—two hundred and sixty-eight used tobacco in some form?" John will be delighted to learn that his suggested operation on the *mouth* of the Mississippi is in a fair way to be accomplished next year, as the Convention adjourned to meet on the banks of a noted tributary of that same river.

NEW DENTAL DEPOT.

By reference to our advertising sheet, Dr. Crowell's card will be found. It is not necessary for us to say we will introduce him, for every body knows him.

Dr. Crowell has gone into the manufacture of teeth, and we see by his advertisement he is promising rather more than has been done as yet, by any other, just see his prices of teeth; these teeth, he says, are of the first quality. And even at these prices, he proposes to make a discount on large bills. Now gentlemen of the profession, if you can get such teeth at these prices, "pitch in."

He has on hand, " at lowest prices," all dental materiels and fixtures. I cannot suggest any better method of testing the truth of all the doctor says, than just to try him.

☞ By the kindness of our friend John R. McCurdy, one of the editors of the News Letter, we have the proceedings and discussions, of the late American Dental Convention, all in proof, and in very good condition. We will venture the assertion, that Mc put *some* labor upon it. For all this we are very much indebted, and may the time soon come when we can return the favor.

DENTAL DEPOTS.

We must congratulate the profession, of the West, for the very superior facilities which they enjoy for procuring materials and impliments, necessary in the practice of the profession. It would seem a useless work to specify to the profession of the West, what our dental depots have for sale. But, gentlemen, by the way of refreshing your minds, we would just say that you will find at

TOLAND'S,

No. 38 4th street, every thing you ever saw there before, and many of these much better than you ever saw before, for the improvements making on comparatively old things, outstrip all calculation, and you will find a great many new things that you never saw before. Almost every time we step into this establishment, we have to enter into an investigation of some new instrument, appliance, or material. John has been out on an excursion, and we should judge, that nothing had escaped his sharp search. Every new thing that turns up, he seems to have it.

DR. J. M. BROWN,

Corner of 4th and Walnut streets, has a stock inferior to none, his cases and drawers are always filled with the finest selections that can be made anywhere.

The Dr. has been in the trade long enough to know just what you want. He knows just about as well as any of the profession and a great deal better than *some* of them. He knows not only what you want, but he knows where to get it. You will always find at Dr. Brown's a large superior stock to select from.

Every thing can be found in our depots that can be found in the East, and some things that can not be found there. And to the profession of the far west, we would just say, that, DR. A. M. LESLIE, of the St. Louis dental depot, is just as thoroughly prepared, and as ready to supply your requirements, as the most fastidious could wish. The Dr. is a superior practical dentist, of many years successful practice, so in his hands your cases are perfectly safe.

LABIAL FILLING OF UPPER INCISORS.

This is a new, and we think, a very excellent method of filing large cavities upon the anterior surfaces of the front teeth. A full description is given upon another page, taken from the last number of the American Journal of Dental Science. The description is by Dr. Volck, of Baltimore, and the first suggestion from Dr. Maynard. By this method, the very great objection to large brilliant metalic surfaces, upon the front teeth is almost wholly obviated, of course the little metalic ring will be there, but with a good degree of skill this may be made so small as scarcely to be perceptable to the common observer. The method of preparing the operation is so well described that we hardly venture to make a suggestion in regard to it, yet we think it might lessen the difficulty of forming the cavity and the piece, to have about three or four sizes of wheel burs with which to form the cavity, and then a corresponding number of holes in a piece of steel just a little less than the corresponding burs, into which to fit the enamel filling. This would make the operation of fitting very neat and easily performed. There will some times be elliptical cavities that could not be made round, without cutting away too much of the tooth, in such cases the fitting must be done by the eye.

We have just received a beautiful specimen operation of this kind from Dr. Ed. Hale, junior, of St. Louis. This is pearl set in a ring of gold, and looks beautiful, and is very neatly done. Some may object to this operation because it is difficult, but a little practice, with some skill and care will enable any good operator to accomplish it well, but a bungling awkward manipulator should never attempt it. T.

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THE

DENTAL REGISTER OF THE WEST.

VOL. XII.—DECEMBER, 1858.—NO. 2.

Original Essays and Communications.

FILLING TEETH.

BY J. TAFT.

CRYSTAL GOLD.

The form of the cavity for crystal-gold filling, should be much the same as that described for other fillings, except that the same care is not necessary for special retaining-points, for the first portion of gold that is introduced into the cavity, as good crystal gold, will attach to the wall of the cavity without any such special retaining-points: such a form should be given as to secure the first piece firmly in place. The gold should be cut or broken into pieces corresponding in size to the cavity, so that they will enter freely into it.

The filling may be commenced upon the bottom of the cavity, or upon one of its sides; such a point always being selected as will most effectually retain the gold in place. The pluggers should be of various sizes,—the first one as large as can be used in the cavity, and smaller ones for condensing more thoroughly; and all should be serrated with from two to six sharp points, usually four. The blocks may be taken up on the points of the plugger, and passed to their proper position in the cavity, and there condensed. The sharp, serrated point leaves the surface in good condition for the reception of the next piece. The gold should be packed to the walls of the cavity a little in advance of the center, so that its adaptation may be more complete. In this manner, the filling is built up as much as is desirable, if it is kept dry,—and unless it is, all cohesion is lost.

The gold, after it is cut up, is put on a piece of charcoal, and annealed with a blowpipe, by the flame of a spirit-lamp, carefully, so as not to fuse any of the particles, as that would impair their facility of cohesion in this process: very minute portions are often required to fill up small interstices, or notches.

In crown cavities, the filling should begin at the bottom; in proximal cavities, at the cervical wall. By introducing the gold in this manner, the pressure is made on a line with the axis of the tooth; which is an important consideration. The surface of the filling should always be convex, though in some cases but slightly, except where the antagonism of the teeth prevents, as in the crown fillings of the molars,—in which case, it should be adapted for the reception of the opposing tooth. Proximal fillings should usually be a little convex; yet many good fillings of this class are effected with a surface perfectly plain with the borders of the cavity. The borders of the filling, however, are better protected when it is somewhat convex.

Crystal gold, of perfect character, presents to the walls of the cavity a surface better calculated to be retained, than foil in any of its forms; though adhesive foil possesses this advantage to a greater extent than foil in any other condition. The points and edges of the crystals are brought in contact with the walls, and made to take a firmer hold upon the dentine.

In forming crystal gold into a solid mass, two principles are operative: cohesion acts upon it as potentially as upon gold in any other form, and, in addition, there is the interlacing, or locking, of the crystals with one another; so that a more perfect union of the different portions of which a filling is composed, is obtained with crystal gold than with foil. Yet, good adhesive foil, when thoroughly worked in, attains almost the same condition. With perfect crystal gold, however, some advantages may be secured, that can not be had with foil. The gold will be retained in a cavity that will not retain a foil filling; it is more easily formed into a coherent mass; it can be built out with more ease; cavities can be filled with it that can not be filled with foil at all; and a filling of it is susceptible of a far better finish, with the same labor, than a filling of foil.

It is important to keep the gold perfectly free from moisture, while being introduced and consolidated; for moisture instantly destroys the cohesive property of the gold. And the more complete the exclusion of moisture from the cavity, during the process, the better for the success of the operation. The surface of every filling should be consolidated for finishing, before it is allowed to become moist; for, whenever it becomes saturated with moisture before consolidation, it is impossible to make a perfect finish. There should always be gold enough superadded to insure this; and the consolidation of the last surface should be effected with a rough-ended, not serrated, instrument.

Finishing Fillings.—The method of finishing a filling, and the manipulation, will depend somewhat on the locality of the cavity. When this has been completely filled, and thoroughly consolidated over all the surface, and especially all round the border of the plug, the file should be applied to dress off any projecting portion, and render the filling smooth. In consolidating the surface, an instrument should be used, that would not pit it, and the file should remove all indentations. The work of the file, however, should be but partially performed at first, and the surface consolidated again, with a square-pointed instrument. To obtain the most perfect finish, the surface should be brought to a uniform consistence; and this condition can not be reached by the use of sharp-pointed instruments, nor fully by that of the blunt plugger at the first effort, but by the alternate use of the file, the blunt condenser, and the burnisher. A coarse file should be employed in this part of the process; but when the filling is dressed sufficiently, and in good condition, the fine file should be used, alternately with the burnisher, till a perfectly uniform surface is obtained. In all cases, after the file has been applied, the plug should be washed off with a brush, to remove all detached pieces of gold, before the burnisher is put upon it; and after the fine file and burnisher, the Scotch or Arkansas stone or very fine pumice should be employed to remove the file-marks. The pumice may be applied with water on a strip of chamois skin, a piece of linen tape, or a stick of soft wood,—the latter being the most convenient, as it can be used with one hand and shaped to suit any place or position.

After the stone or the pumice has accomplished its work, and the filling has been thoroughly washed, a fine burnisher, with a solution of castile-soap, is employed to give the finish. The burnisher should be of the best cast steel, of high temper and fine polish. Considerable skill is requisite to give the best effect with the burnisher; it should pass smoothly and gently over the surface, throughout its whole extent, and in parallel lines, with a pressure neither too light nor too heavy. It should also be applied very thoroughly upon any portion of the tooth about the border of the filling, that may have been cut by the file or any other instrument. Indeed, quite as much—if not more—care should be exercised upon this as upon the plug itself: it should be polished as smooth as the enamel, if possible; for the more nearly perfect it is in this respect, the better will it resist the action of deleterious agents.

This method of finishing gives to the filling a perfect metallic luster; which, under some circumstances, might be objectionable. Two other methods are in use: After the burnisher has been applied, as above, the buff or tape, with rouge, may be employed, by passing it rapidly over the filling till the metallic luster is destroyed, or deadened so as not to reflect the light as before,—thus leaving a very desirable finish.

The other method is, to stipple over the surface of the burnished filling with the end of a piece of hard wood,—sandal wood is recommended,—charged with finely pulverized pumice. This gives a beautiful, velvet-like surface, and is fine for fillings in the anterior portion of the mouth, where they are exposed to view. Rotten stone, applied either with the buff or with hard wood, imparts a finish which, though a little different, is finer than any of the others.

For finishing, some operators prefer to cut and polish, instead of filing and burnishing. But neither so good nor so fine a finish can be effected in this way, and it is probable that economy of time and labor, especially the latter, suggested the method.

In all cases, the filling should have a distinct and difinite margin: the gold should be trimmed off quite up to the border of the cavity, by passing round it a small, sharp instrument, so as to detect and pare down any portion that might overlay the tooth. For, if overlapping portions are permitted to remain, foreign substances will lodge beneath, and induce decay. Neglect in this particular has occasioned the loss of thousands of teeth that otherwise might have been saved.

The subject of finishing is almost entirely overlooked by very many operators; but by the neat and skillful it is esteemed of sufficient importance to demand as great labor and pains as any other part of the operation.

CONTINUOUS GUM WORK.

BY DR. W. B. ROBERTS.

To the Editors of the Register.—*Gentlemen:*—By your last number I perceive that you hold me to the promise I rashly made at the 4th Annual American Dental Convention, of furnishing an account of the method of making continuous gum work. The task I find is a more formidable one than I anticipated, and I regret it has not fallen to one more familiar with the use of the pen, and more competant than myself to do justice to a subject of so much importance. Why it has not before this been fully treated by those who have written so ably upon other branches of mechanical dentistry, it is difficult to say, unless it be that a knowledge of the art is still limited to a few, or that *its being patented* stands in the way of a favorable notice. However that may be, the admitted beauty and durability of the work, and its being generally adopted by the best practitioners, render a knowledge of the method of making it desirable. I shall attempt but a plain practical account of it, such as one may be supposed to offer to an actual pupil entering upon its study, after having made himself conversant with the usual practice in preparing and fitting gold or other metallic plates.

We will suppose the work before us is the preparation of two upper sets. In following out the different processes, a few remarks may be introduced, suggesting methods of avoiding difficulties most likely to be met with.

Impressions.—When the plaster, mixed in the usual way, is nearly ready to set, you should fill the cup, raising the center a little higher than the edges. Introduce it gently into the mouth of the patient, after placing a napkin under the chin, and then carefully work and press the cup up to the roof of the mouth. The head of the patient should be inclined forward, so that the saliva may flow out upon the napkin. By neglect of these precautions I have known patients in the hands of inexperienced operators to suffer severely from choking. The cup should be held firmly in its place, not allowing it to be disturbed in the slightest degree, until it is ready to be taken out. The process is to be repeated for the two above-mentioned cases. Gutta percha in partial cases may be used to great advantage for taking impressions.

PLATES.—Leaving each one to his own method of making plaster casts, the next process is the preparation of the dies and plates, and this presents some peculiarities which distinguish it from the routine pursued in making gold plates. In every piece of platinum work the edge of the plate should be turned over, in order to give a smooth finish to the edge, and under which the gum and body flows, adding much strength to the entire piece. The body and gum, when laid over the surface of the plate, should not quite reach the posterior edge, but about a quarter of an inch of the metal should be left exposed; the rest of the plate is to be covered with the gum work, which should slope off smoothly to the platinum, so as not to present any roughness to the tongue, and the surface of it is to be polished, to imitate the appearance of the natural rugæ of the palatial arch. The sloping edge may be obtained by soldering a three-sided wire across the plate, near to its edge; or by a method which I find preferable for its greater neatness, and the increased stiffness it gives to the plate. This is in building upon the plaster model (taken from the impression) a little triangular ridge in the same position the wire would occupy, extending in crescent form from the back edge of one wisdom-tooth to that of the other—the curve being forward. The ridge should slope very gradually toward the back edge of the model, and the rise, when transferred to the plate, will hardly be perceptible to the tongue. The front side of the ridge serves as a shoulder for building the gum work against. I have sometimes carried the gum out to the edge of the plate; but this requires a very accurate fit. This result may also be obtained nicely by doubling the posterior edge about one-fourth of an inch in width, and finishing against the edge of the piece put across. We will suppose the first two methods (the wire and the triangular ridge) to have been adopted for obtaining the ridge upon the plates, one for each of the two upper sets. The mouth, when the impression is taken, should be carefully examined, to note the position of the muscles, and to determine the proper depth of the plate. You are then to take a little beeswax or plaster, and build a rim around the edges of the plaster models as high as you wish the plates to come, thus forming a shoulder, which, when the two parts of the die are closed over the plate, will form an angle of about (50) fifty degrees, which may be bent down, as will be hereafter described. The dies may be prepared of zinc or other metal, or any alloy you are accustomed to employ for this purpose—some precautions are to be taken in striking the plates, which are not required in swaging those of gold or other materials that are not to be afterward exposed to high temperature. Being cut by the pattern leaving it to project about one-eight or one-sixteenth of an inch upon the shoulder, for a rim, the plate is to be laid upon the metallic die and gradually worked down with a wooden or horn hammer to a tolerably close fit, before attempting to swage it. It may be split in front if necessary, and also at the heels, and afterward restored by soldering the same as is practiced with gold plates; but this is better omitted in cases that can be swaged whole. Great care is required to avoid bursting or tearing the platinum in the swaging. Annealing should be often repeated; and previous to each annealing, the plate should be cleaned with nitric acid in order to remove all particles of zinc and foreign substances that may be taken up and adhere to the platinum. These, if allowed to remain, would be incorporated with the platinum by the action of the heat in annealing and baking, which would seriously injure it. The swaging should be continued with hard blows, with a heavy hammer or drop, forcing the platinum into every depression in the dies; and the greatest care should be taken in completing the work, that the sur face is smoothly finished, showing no dents or scratches. We will suppose the two plates we have commenced to come out in different conditions—the one we intend to put the wire across to finish the gum work, is disfigured upon the surface with dents and imperfections, resulting from incautious swaging, and with a hole in it, caused by being annealed without thorough cleansing from the particles of zinc or other metals it came in contact with, which made it extremely brittle. Zinc or lead is particularly destructive to platinum when the metals are heated together. The other plate, we suppose, is in good order, with the exception of the splits purposely made before swaging, and which are now to be closed up by soldering with pure gold. The hole in the other is also to be mended by introducing over it, on the palatial side of the plate, a piece of platinum, and soldering this with gold. Soldering at the same time across at the point heretofore described.

ARTICULATION.—You will now proceed to fit the plate in the mouth of the patient, noticing particularly whether it rocks or loses its adherence when pressed upon one side or in front. If satisfactory, next place upon the plate a ridge of wax, which will serve to show the length and position the teeth are to occupy, and serve as a temporary fastening while arranging them. The best swaged of the two plates we will suppose now makes the best fit, and being provided with wax, is placed in the mouth of the patient, who is directed to shut the mouth in a natural way, and cause an impression of the under teeth to be made in the wax above. A vertical line is then to be drawn in the wax in front, marking the division between the two central incisors. We have now a perfect impression of this one; but no provision for determining the proper length to give the teeth. For this the upper lip should be allowed to assume a natural, easy position, and so much of the wax should then be cut off, as to leave about one sixteenth of an inch in the place of the central incisors visible below the edge of the lip; towards the bicuspeds the length should slightly diminish. The other plate, when furnished with the wax, we suppose is placed in the mouth of a person who has, for years, enjoyed the use of only the front teeth—when such an one is directed to close the mouth, it will be found almost impossible to make two successive impressions of the lower jaw in the wax coincide; the patient does not bite twice in the same place. Close observation and the greatest care, will, therefore, be required in determining the proper place for the teeth, in order to obtain a natural expression. The face, moreover, in this instance, is sunken, and requires filling out to restore its original contour. For this purpose wax must be added whenever it is needed to form prominences, and depressions must be moulded in it where these are natural, as for instance, directly in front, where a fullness would give the appearance of a swollen lip. For the prominences or cheek restorers, designed to fill out the sides of the face, the projection of wax must not extend further towards the front of the mouth than the line between the second bicuspid and the second molar, if brought beyond this point, they distort the features, and show; when the mouth is opened, the shape and dimensions of the prominences should be obtained by repeated trials, observing carefully the effect of every alteration, as the patient is purposely kept in good humor, and without exciting suspicion of the object, induced to laugh and give to the features their changes of expression. The dentist should watch his patient as closely as an artist his sitter, in painting a portrait from life. And, here let me say, that this, that I call *artistic dentistry*, has been, and still is, grossly neglected; for, how often do we see persons in whose faces we discover a dilapidated condition of the entire outline of the features. This can all be attributed to want of knowledge, or neglect on the part of their dentist. After having ascertained the necessary length and projection to be given to the cheeks and teeth, place the wax and plate in cold water, to render it as hard as possible (as we will suppose this to be a set to match an artificial under set) we will then place wax upon the under plate, the length as near as possible that we wish the under teeth, soften it, and placing both plates and wax in the mouth, let the patient gently close the mouth until the upper wax presses into the under sufficiently to allow the lips to close or touch in a natural and easy manner. This will show the length required for the under teeth. Let the patient open and shut the mouth, merely touching the wax together—let it be repeated several times, opening the mouth as wide as possible, and bringing the jaws suddenly together, so that there may be no mistake. When right, let the gums be pressed together so as to hold the whole mass firmly without disturbing the wax; then, with three pins or pivots of wood, fasten them together, running one near each corner of the mouth, through the edge of the under wax in the upper, the other pin into the edge of the upper, running down into the under wax at a point midway between the other two pins. Then remove the whole mass at once, place it on the articulating frame and run in the plaster. After it hardens remove the upper plate, place it upon a piece of paper, and draw a pencil mark around it, representing the projection the wax is intended to give the teeth and cheeks. Turn it over and draw another line. With these two lines or drawings as a guide, the teeth, body and gums may be placed as accurately upon he plate, as the wax had been, (which it will be necessary to remove by the process of imbedding, lining and soldering,) without fitting or trying it in the patient's mouth, during the process of making the set. Yet, it is always desirable to introduce them into the mouth once or twice, for instance, after the teeth are soldered fast—and again when the first coating of body has been applied. This prevents all possibility of mistake.

ARRANGING TEETH.—The next operation is imbedding the artificial teeth in the ridge of wax prepared to receive them. This point requires especial care, and also some artistic taste; for, a slight variation in the position of a tooth may give a decided and unfortunate change of expression to the whole set. You will begin by cutting a bed for a central incisor, on one side of the central line marked in the wax, as deep as the thickness of the tooth, and laying this in its place, where it will be held by the wax. One tooth after another is to be thus placed, till the set is complete. Now, I will take the piece in my hand, place my thumb across the teeth to represent the lip, and observe the effect. The central line is right, the lateral incisors are even; but they stand too formal and stiff. I move them up a little to make them shorter than the centrals and incline them slightly, so that one corner of each nearly touches the adjoining central incisor: this gives a more natural expression. I move the canine teeth also, to make them a little more prominent. Attention must now be given to avoid in the general arrangement a defect very common in sets of artificial teeth, viz: too great exposure of the back teeth giving the appearance when the mouth is opened, of its being filled with teeth. This comes of the curve of the piece being carried too far back, when it should be limited merely to the space occupied by the six front teeth. The bicuspids and molars must therefore be pushed in, the first bicuspid being nearly hidden behind the canine, and those beyond extending back in a straight line diverging slightly as they approach the end of the jaw. The teeth may now be covered with a thin coating of shellac, which will often prevent their becoming rough, when exposed to the heat of the furnace in soldering. They are next covered over with a coating of clean plaster, which holds them firmly while the linings are put upon them, and then imbedded in a mixture of equal parts of plaster of Paris and asbestos. When this hardens, the wax may be removed from the backs of the teeth, leaving them bare for receiving the permanent linings and attachments to the plate.

LINING AND FASTENING.—One set may have been furnished with the teeth known as "Robert's teeth," which are made with but one long pin. Under these you will fit a slip of tin or sheet lead, passing from one canine to the last molar on the other side, and a corresponding piece crossing this from the other canine to the other molar. These are patterns from which to cut the slips of platinum. The latter when shaped are to be punched full of holes (through which the body runs, giving increased stiffness to the whole), and placed under the pins, standing edgewise upon the alveolar ridge. Other strips may be introduced wherever you think the work requires stiffening and strengthening: the whole lining may thus be doubled or tripled. A wire also may be run across from one bicuspid to the other, which will counteract any tendency in the work to spread. The pins may now be bent down over the slips holding them in their places, until the fastenings are completed by soldering them together. The linings may thus be put in, in from ten to twenty minutes.

The set provided with the other style of teeth, having two pins, is to be managed in another way. Place the piece on the table, the back edge directed toward you, and the teeth uppermost. Cut platinum into slips one for each tooth, of width equal to that of the tooth and half the spaces beside between it and the one next to it. These, when arranged in their places, will then form a continuous lining behind all the teeth. Bend up about one-eighth of an inch of one end of each strip at an angle of forty-five degrees, and divide this portion by slitting it with four or five cuts. Touch the points of the pins with a camels hair brush dipped in rouge or other easily transferred coloring-matter, and apply the slips of platinum, one after the other, to their respective teeth, with the split end resting on the plate, that they may receive the mark for the holes for the pins. Then punch the holes. The upper ends may now be trimmed off nearly down to the holes; and the projecting sides be slit evenly with the edges of the tooth from the top about halfway down, leaving the narrow slips attached. With a small pair of tweezers place the lining on each tooth, letting the pins come through the holes punched for them, and then pinch each pair of pins together with pliers, thus fastening the linings firmly to the teeth. The slips of platinum at the edges are then to be interlocked with the slips belonging to the adjoining teeth till all are bound together in a continuous lining. The bottoms or split ends resting on the plate should then be pressed down so as to come in close contact with the plate, this being necessary to insure adhesion by soldering. With a sharp pointed instrument make a scratch along the plate about one-sixteenth of an inch from tee foot of the linings, which will prevent the solder flowing out upon the plate. Place a small bit of pure gold upon the pins, another bit at the interlocking of each pair of slips, and one or two at the base of the lining of each tooth, adding with each bit as much borax as will adhere to the little piece of solder, and no more. The piece is now ready for the next process of—

SOLDERING.—You may now gradually heat up the work in the muffle of the furnace, and when it is of a deep red, remove it on a piece of charcoal or other suitable support and solder the parts with a hydraulic blowpipe. But if this or no other one equally powerful be at hand, the piece must be left in the furnace, and a careful watch kept to remove it as soon as the solder all flows; for, exposure to high heat is apt to etch or roughen the surface of the teeth, by the adhesion of plaster and asbestos to the enamel.

After taking the work from the furnace and cooling, the next operation is to remove the plaster; and the portion of this forming the base, on the part that corresponds to the jaw, should be reserved to be used as a support for the piece in the subsequent bakings, which prevents, in a degree, change of shape or springing of the plate. Should the piece soldered in the furnace be found on removing the plaster and asbestos, etched or rough, we will restore it as described under the head of enameling or gumming. The pieces are to be worked, then placed in diluted nitric acid for the purpose of removing the adhering borax and other foreign substances, and then washed again. They are next laid upon the metallic casts to be there held while the plate is scratched or etched with a sharp point over all the surface intended to be covered with the body and gum.

FIRST COATING OF BODY.—The material we prefer over all others is Allen's preparation, called "body," as prepared by E. & L. Roberts. This being made into a thick paste, with a little water, is taken up with suitably shaped knives or spatulas, and introduced between and around the teeth, and over the palatial arch as far back as the projecting bead or the wire left near the back edge of the plate. The paste should be carefully worked and pressed into the interstices it is designed to fill, packing it solidly, and building up or keeping back according as prominences or depressions are to be produced. Then with your little knives carve out between the teeth, leaving a furrow which will produce a prominence over the fangs, resembling the roots of the teeth as they appear in the natural gums. The crowns of the teeth should be kept carefully free from the coating, as also the spaces between the teeth, lest these should be afterward baked together. Sufficient width must also be cut under along the projecting edge of the plate to admit of its being turned over, as hereafter described.

BAKING.—When the plate and teeth are thoroughly cleaned with a brush, and all loose particles of the paste removed, it is laid upon the base reserved for the purpose, and this upon a baked fire-clay tile or slide, and is introduced into the outer part of the upper muffle of the furnace, as it becomes hot it is gradually pushed farther in. When quite red hot, it is transferred to the lower muffle, and there brought to a full white heat, at which it may remain from five to twenty minutes, or until it is seen, on drawing it to the outer end of the muffle, to have a glossy appearance. It is then removed and placed in another muffle not connected with the furnace, which should be closed up while the plate gradually cools. The process is somewhat varied in the case of the set with single pins to the teeth, as these require some additional support to counteract any tendency to turn upon the pin, or otherwise move from their place. This additional protection is obtained by turning the plate with the teeth down and burying these for half the length of the crowns in a paste of pure pulverized silex placed to receive them. This will fill the spaces between the crowns of the teeth and may be removed without difficulty after baking. Or, placing the set upon the plaster base as before, we will brace the teeth requiring support by introducing small pieces of platinum in the spaces. This precaution it may be well to adopt in any case.

When the piece is quite cool, it must be placed upon the metallic die to detect any alteration that may have occurred in its fit, and to restore it to its former shape; which may be done by pressing it down with the hand or by tapping the molar teeth with a wooden or horn hammer, and pressing the plate at the same time firmly down to the die. It may sometimes be sprung back by applying the thumbs to the air chamber and the fingers to the cutting edges of the molar teeth and pressing; or a gentle tap with the wooden hammer upon the air chamber may answer the purpose; but the safest plan is to use the die. Should cracks be produced in the body, no harm is done, as these are made to disappear in the second baking. The edge may be turned over by means of the burnisher, using also a little hammer and pliers too, if necessary. After this is done, the plate should be fitted upon the die, to be sure that the fit has not been disturbed.

It is well also to test it in the mouth of the patient before proceeding further, as any alterations required can be conveniently made in this stage; but if the work has been well done so far, it is not essential to try the fit in the mouth.

Second Coating.—The paste for the second coating is made the same as that for the first. It is carefully laid upon all the parts that require to be built out, and is introduced into all the crevices into which it is made to settle, by lightly tapping the piece. With the little spatula the surface is nicely carved and shaped around the roots of the teeth, as in preparing for the first baking. A little ridge is raised with the camel's hair pencil from the line between the two central incisors running back along the palatial surface to the middle of the posterior edge of the plate; and this ridge is next halved by a central line made along its whole length, by the brush or the edge of the spatula. On each side of the ridge, little prominences are to be raised to imitate the ruga of the mouth; the dentist must, after observing different mouths, exercise his taste and judgment in producing a natural effect. The second baking may then be conducted like the first, (with the exception of its being a little harder), and the subsequent cooling also; when the piece should be placed again upon the metallic die to prove its shape unaltered, in which case it is ready for the coloring.

ENAMELLING, OR GUMMING.—The "gum," being mixed as was the body, should be evenly laid on, in proportions only to be learned by experience; and in the selection of the shades of color you must be governed by your own taste, as some dentists prefer brighter and some paler tints for their work. I should recommend, however, the use of very thin coating at first; for this can be added to, and a deeper shade given by a second heat if desirable. If the teeth have been etched in soldering, a little coating of etching enamel, of the consistency of cream, should be laid upon them with a camel's hair pencil. The plate being well cleaned is then ready for the furnace; but more care is now required not to expose it too suddenly to a high degree of heat. If pushed too fast into the muffle, pieces are likely to scale off, leaving defective spots, such that it would be necessary to remove the work, cool it down, and repair with more gum. When well heated in the upper muffle, the piece may be removed to the lower one, and exposed to a full white heat from ten to twenty minutes, or until the gum has thoroughly flowed and shines like melted glass.

It is now to be removed and cooled down as before, in a cold muffle. When at blood heat take it out, and place it in water of about the same temperature, avoiding touching it with the fingers. This is an effectual method of preventing the checking or crazing of the gum, which frequently occurred in the old way of annealing, when the piece was cooled and taken in the hands. I discovered it some time ago, and communicated it to several dentists in this city; and I notice publicity has been given to it, without my receiving the credit to which I am entitled. Though it appears a simple thing, it is certainly an important improvement. At first, I placed the piece in my mouth on taking it from the muffle; and afterward I substituted warm water. The next and last operation is polishing, in which there is nothing requiring peculiar directions,—I remove from the plate any little particles of gum or body, and rub it thoroughly with fine sand-paper, then with a fine stick and pumice stone or fine emery, and lastly with a steel burnisher or bloodstone, with a little soap suds.

Continuous Gum applied to Partial Sets.—Partial cases may be made of continuous gum; but the work is so various in its nature, that the dentist must necessarily depend much upon his own judgment. Difficult cases will constantly present themselves, that will require the exercise of much study and ingenuity, in which the general instruction that can be given in words, may be of but little service. The first attempt of this kind in my own experience, was in replacing two central incisors. Taking two continuous gum teeth, I placed upon them a platinum lining, slitting this down along the edge of one tooth nearly through the piece and up the edge of the other tooth by a parallel cut, leaving the two parts joined together by a narrow slip. This allowed sufficient motion between the teeth, so that they could be adjusted as desired. I then placed a bit of tissue paper on the plaster model, covering the spot to be occupied by the teeth and gum, to prevent the adhesion of the body to the plaster, and holding the two incisors in their places, I worked the body into all the depressions of the gum and around the roots of the teeth. I then removed the whole from the model, and placed the piece in a paste of pulverized silex, or plaster and asbestos, upon a slide, and baked as described for full sets. The little slip of platinum kept the two teeth in place. The work shrunk somewhat; but this was remedied by again placing the piece upon the model, with the intervention of tissue paper covered with a thin coating of body. Into this I pressed the piece, till it occupied its true place, and then filled in again with more body all the crevices around the roots of the teeth, and rebaked.

After enamelling, if the work has been carefully and skillfully done upon this plan, it will be as fine a piece in appearance and fit, as can be made. It may then be soldered to a gold plate, and the little strip of platinum between the teeth be cut out. With the body and gum formerly in use, many difficulties were often encountered from discoloration of the gum, or from other injuries incurred in soldering. But with Roberts' material, these are easily avoided, and the piece can be treated the same as a block or single gum teeth. In partial sets on entire plates of platinum, I have sometimes found trouble, from the enamel giving way upon the small narrow points that connected the teeth with the plate, by the shock occasioned in biting. I have consequently left these points uncovered, and used two or three thicknesses of platinum to give greater strength. But where this is likely to occur, gold plates would be preferable, if nicely adapted with single gum teeth, or blocks of continuous gum, as the case might require. I have also applied continuous gum in cases where the natural teeth, from one to five in number, were left in the mouth, by making the plates as in full sets, cutting out around the natural ones, and raising a small bead, or placing a light wire around about one-eighth of an inch or more from the teeth, against which the gum or body is to be finished. The points around the teeth are to be left free, in order to be burnished down in case of imperfections caused by the difficulty of obtaining exact impressions in these places. In such cases, I have sometimes formed a strong standard of several thicknesses of platinum fitting closely against one or more natural teeth, leaving a loop-hole, through which to run a gold clasp for afterward securing the artificial set.

I have also secured the gold to the standard by rivets of platinum, and sometimes by two or three gold screws, not providing, in these cases, the loop-hole. These methods are to be preferred to using solder for fastening; for, in case of repair, the clasps are easily removed without leaving any foreign substances: but in case of soldering, however carefully they may be removed, there will remain some alloy, which, in the baking heat to which the piece is to be exposed, will be incorporated with the platinum. Even so small an amount of silver as may be in gold coin used for solder, will communicate a yellowish tinge to the gum, spoiling the whole work. Many operators in their early practice, I doubt not, experienced this result; and learned that no alloys, especially of silver or copper, can be admissible for soldering this work. I have tried platinum clasps without success, as no elasticity could be obtained, and therefore would not hold upon the teeth. Another source of mischief may properly be noticed in this place. In baking, especially with a new furnace, or with muffles lately renewed, either at the first or second heat, or it may be in enamelling, the piece is sometimes changed in its texture and color, as is supposed by the gases present, and the phenomenon is called gassing the piece. The body becomes porous like honey-comb, and of a bluish color. When this occurs, there is no remedy but to place it upon the metallic die, remove the whole of the injured part, and replace it with a new coating of body and gum. The teeth are seldom, if ever, thus affected. As a precaution, the muffles should be well ventilated with holes for the passage of the heated air and gases.

Though continuous gum work may at first appear tedious and beyond the reach of inexperienced dentists, they will soon find that by patience and perseverence, it may be done rapidly, and with much more satisfaction than gold work. Their patients will be better pleased with it, and the practitioners, who are influenced by professional pride, and are unwilling to place any but the best work in the mouths of their patients (except where circumstances justify the use of inferior articles), will find that they can not dispense with it.

REPAIRING.—Dentists, entirely unacquainted with the method of preparing continuous gum work, have been known to speak unfavorably of it to their patients, because of its weight, its liability to be broken, and the impossibility, in this case, of its being repaired. No substitutes for natural teeth are past finding fault with. We claim no perfection for this style; but we do insist, its defects are of less account than those of other kinds of work. It is true, the pieces are more liable to be broken by a sudden blow or fall; and for this reason, those who wear them should be especially cautioned to protect them from injury. Yet it has been proven by comparison with gold work, that the continuous gum presents fewer cases of injury, than the gold; and that these cases are by fractures resulting from carelessness in dropping the pieces. But, even if badly shattered, and several teeth should be knocked out, the piece may be soon restored, with no mark or scar indicating fracture or repair. In case of a single tooth being broken, a new one is readily inserted by entirely removing the crown of the injured one, and grinding out a niche in the gum at its base, nearly one-fourth of an inch deep, to receive the new tooth; then fill up the niche with body, and press the tooth you wish to insert down to its proper position; trim the surplus body about the neck of the tooth as in full sets, absorb the moisture with a napkin, and apply the gum to the body and wherever required.

Stay the tooth with a little plaster and asbestos placed upon its point and reaching over, so as to include the adjoining tooth on each side. A better method, however, is to place the teeth downward, imbedding their points in a paste of pulverized silex laid upon a slide, and then subject the piece to the heat required for enamelling. Once baking will generally suffice to complete this operation. But, if a piece has been more seriously injured,—say by loss of a central and canine tooth, with a point broken out from the edge of the gum, and the plate is bent so as to have lost its fit, and the gum shrunken away at any point,—we adopt a thorough method of repair. We first take an impression of the mouth and make a plaster model; upon this we place the plate, and over the point where the gum is shrunken we chip off the body and gum, and with a burnisher work the plate down wherever required, to exactly fit the model. We then make a niche for each tooth to be inserted, apply the body and gum, stay the teeth, and bake the piece as above described. If it has been thoroughly packed, two bakings will be sufficient, but sometimes three may be required. The only rule is, to repeat the operation till the object is accomplished, taking care always not to overheat the piece. In case of the piece having been long worn, it is well, before doing any thing to it, to subject it to a moderate degree of heat, sufficient to burn off any impurities it may have collected in the mouth.

Another set may be presented for repair, literally broken to pieces; but the plate remaining a perfect fit, and some of the teeth being undisturbed, we wish to avail ourselves of these. We therefore make a dam of putty around the edge of the plate, and run in fusible metal to form a cast, which shall serve as a support for the plate. Not to endanger cracking the teeth by the heat, the piece may be placed in a dish containing a little water, and after the metal is poured and begins to harden, more water may be added, so as to cover the whole mass. But this is hardly necessary, if the alloy be run nearly at its cooling temperature.

The piece being now supported upon the cast, and held firmly with one hand, a small chisel, made from an excavator, may be applied with the other to the old material which it is desirable to remove, and an assistant gently tapping this with a hammer, the body is quickly chipped off between the teeth, and wherever the chisel is directed without injury to other parts, or without mis-shaping the plate. The teeth may now be inserted and soldered to the plate, with the old or new linings if required, and the new body and gum may then be applied, as in making a new piece. All this may seem to involve much time and trouble; but little more is really required than to repair a gold plate. The cast of fusible metal is much more readily made than a plaster cast. The old body and gum is removed and new applied, in shorter time than two gum teeth can be fitted upon the gold plate, and the soldering and first baking of the body requires no more time than to solder and cool the gold work. We then have, in the one case, the gum to be applied, and in the other, the gold is to be polished; so that the whole difference of time involved, however great the repairs, need not be more than one or two hours. But a single tooth may be repaired as soon as a gum tooth on gold plate. One difficulty, often met with in mending, requires to be noticed. It arises from the necessity of employing mixtures likely to be of different composition from that of the original body; and possibly more infusible. In this case, the old body will melt, before the new has bcome incorporated with it, thus ruining the work by overheating. In some instances, after one baking, I have been obliged to condemn the whole work and entirely replace the old body. This difficulty is now obviated by being able to use always the same material; it being prepared in large quantities, by Dr. E. A. L. Roberts (to the amount of a ton weight at a time), so that the supply of uniform composition can be depended upon for years to come.

CONCLUDING REMARKS.—In looking over this paper, which has already reached a length I did not anticipate, it is easy to perceive that numerous points have escaped notice, which, to the experienced manipulator, are of trivial importance; but to the student, without more detailed instruction, may be insurmountable obstacles to his farther progress. If, however, the latter possess a fair endowment of skill and ingenuity, he need not despair of success.

The plain outline of the various operations, as given above, may be his general guide which will lead him to good results; but his own judgment, skill and taste, moreover, must be repeatedly exercised, independently of my instructions, however minutely they may be given. Like all other processes, this can not claim to have reached perfection, and, therefore, there is still room for improvement. It admits of infinite variety in its application, and hence presents a fine field for artistic taste and invention; which, I can not doubt, will be well improved by the genius and energy exhibited by the Dental profession in all such directions. There is a fascination about this style of work, which no other possesses, as it seems to compete, in point of beauty, with nature itself.

INTRODUCTORY LECTURE,

To the Dental Class of 1858-9.

BY PROF. C. B. CHAPMAN.

It was my aim, in my first introductory lecture in this institution, to present a narrative sketch of educational systems in the earliest historic centuries. My present object will be to glance at the history of the earliest educational establishments in the United States,—especially in the New England colonies,—reserving the narrative of others to another occasion. Our institutions are all comparatively modern. Still, in tracing the rise and progress of some of those which were first established, great changes will be found to have been wrought in them. Our country possesses unusual advantages in its historic treasures, in the fact that all which has been enacted upon its domains may be the subject of historic record, save, perhaps, that mysterious race who were the builders of those mounds of unknown origin which abound in different parts of our country.

The history of American colleges has been more faithfully written, than that of any other department of improvement. The scholor and the citizen may well and justly point, with laudable pride, to the inestimable value which was placed upon education in its various departments, by the care-worn occupants of the American colonies. It is in the history of the rise and improvement of American colleges, that we may discover the key to the impulse which led that gallant band of pioneers to forsake their native shores, and to seek an unoccupied country, where they could enjoy the sweets of civil and religious liberty. They were a feeble band; but they were conscious that if their posterity should attain that for which they had exposed themselves upon the mighty deep,—if they were destined to become an honorable and powerful nation,—it must be through their substantial intelligence; for they had been schooled in the nursery where the lesson was faithfully inculcated, that "knowledge is power." They believed that the most valuable legacy which they could transmit to their sons and daughters, would be, to bestow upon them well-organized institutions, in which a sufficient measure of education could be acquired to fit them to occupy honorable and useful positions in the various walks of life.

The early American colonists were men who understood and deeply felt the importance of education; and in pursuing their early plans, they founded a school or college in Newtown, in the vicinity of Boston, in 1636, which was but six years after the settlement of Boston. It would seem that this place gave a name to the institution; but, two years after, it was changed to Cambridge, in honor of the place where the principal men in the colony had received their education.

John Harvard, who gave a name to the institution when it assumed the character of a university, was educated at Emanuel College, in Cambridge, England, and was first settled as a minister in that country. He came to America in 1637, and was made a freeman in the colony before the close of that year. He preached a short time in Charlestown; but, being a victim to consumption, died before the close of 1638, leaving, by his will, one-half of his estate, which half consisted of £779 19*s.* and 2*d.*, for the erection of a College, as well as the whole of his library, which amounted to 320 volumes. A very brief memorial of Mr. Harvard has been preserved, from which it is inferred that he left a widow and an heir who was not his son.

The first name that can be found on the college records, as connected with the department of instruction, is that of Nathaniel Eaton, who assumed the management of the institution in 1637, in the double capacity of instructor and agent for receiving donations for the erection of a college building. Two years after, the General Court granted him 500 acres of land, on condition that he should continue in the employment for life. In this arrangement, however, the confidence of the managers was misplaced; for he soon proved to be a tyrant, as he grossly ill-treated the students by keeping them on scanty and improper food, and, finally, beat his usher (Nathaniel Briscoe) in an inhuman manner; for which act, he was fined 100 mark (£66), and dismissed from his position. Soon after this, he went to England, obtained a living in the established church, and became a violent persecutor of non-conformists; and, in 1640, ended his career in a debtor's prison.

In 1640, the General Court added to the income of the college, by granting the revenue of the ferry between Cambridge and Boston.

The most notable incident in the early history of this college, was its agency in the introduction of printing into the American colonies. The first printing press which was established north of Mexico, and the first and only one for many years in British North America, was at Cambridge, and as an appendage to Harvard College. This press was conferred through the agency of Rev. Joseph Glover, of England, who died on his voyage to this country; but the vessel having on board the press, and a person named Dage who had been employed by Mr. Glover for the purpose of conducting the printing, arrived in the autumn of 1638.

By direction of the magistrates and elders, Mr. Dage immediately set up the press at Cambridge; and, in the first month of 1639, commenced printing.

The first work from the American press, was the freeman oath; the next was Pierce's Almanac; and the third was the Psalms newly turned into meter. The first two were printed in 1639; and the third, of which there is a copy in the University library, was printed the next year. This was the first work which rose to the dignity of a book from the American Press.

The second president of Harvard College, was Rev. Henry Dunster; to which place he was elected, in 1640. The school, at that early period, took a high rank,—adopting all the better qualities of the English universities, and rejecting the vain pomp which so extensively existed in them.

The first commencement was held in 1642, on the second year of President Dunster's administration; at which, nine persons received the Bachelor's degree, which were the first degrees conferred in the British American colonies. President Dunster held his office in the college till 1656, which was fourteen years from the time of his appointment, with much credit to himself and great benefit to the institution. He withdrew, on account of some differences in theological belief from those adopted by the governors of the college, which were such as would not have induced such separation in one of less honor; but his peculiar ingenuousness led him to frankly declare his principles, and himself sanction and urge the separation, while he ever after cherished the most friendly relations with the managers of the institution. The property and patronage of the college very greatly improved during his administration, while his own salary was never more than £60, and, a part of the time, it did not exceed half that sum.

Some of the gifts and legacies to the college, at this early period, were of the most singular description.

In 1645, John Buckly, *Master of Arts*, and Matthew Day, *Stewart*, gave, for the use of the resident fellows, a garden containing an acre and a rod of ground, near the college, which was long called the fellows' and tutors' orchard. The record of some of the early gifts to Harvard College, will exhibit a view of the character and business habits of the people who were its early supporters. About 1640, "Israel Stoughton, of Dorchester, bequeathed to the college, towards the advancement of learning, 300 acres of land, about Marsh Brook." The same year, "John Newgate, of Boston, granted five pounds per annum forever, towards the maintainance of lawful, useful, and good literature therein, to be paid from the rents of his farm at Rumney Marsh." "John Coggan, of Boston, merchant, gave Harvard College, for the use of the president and fellows, so long as they may profess to teach the good knowledge of God's holy word and works, a parcel of land at Rumney Marsh, estimated at about seventy acres." The town of Cambridge gave 100 acres of land at Shawshin (now Billirace), to which President Dunster added 100 acres adjoining it.

Among these early gifts to this college, are some of a novel description. One person gave a number of sheep; another a quantity of cloth, valued at nine shillings; a third a pewter flaggon, worth ten shillings. A silver-lipped jug, a trencher, a salt cellar, completes a list which was faithfully recorded, with the donors' names.

The third president was Rev. Charles Chauncey, who was inaugurated on the 27th of November, 1654, and held the office for seventeen years. He was not only an efficient presiding officer and teacher, but a pattern of system and industry. He arose at four o'clock, and opened the exercises by expounding a chapter which had been read from the Old Testament in Hebrew, and, in the evening, a chapter from the New Testament was read from the Greek, and treated in the same way. During his administration, the press was actively employed, and was the object of much respect and attention from the colonists. The books which issued from this press (with the exception of almanacs), were mostly religious; and among the most important, were the publications of the apostle Elliot, in the Indian language. These were printed at the expense of a society in London, which was organized for the propagation of the gospel in New England. Some small treatises issued from this press, which were thought too liberal, and in 1662, the General Court saw fit to subject the press to the control of a commission, which consisted of Major General Gookin and Rev. Mr. Mitchel of Cambridge, who were appointed licensers. This order was rescinded, in 1663, and the press was restored to its former liberty, but for a few years only; for the fears of the government became again awakened, and it became more rigid than before. No press was allowed to be established, except at Cambridge, and every book must be issued under a license from the president of the college and three others, any two of whom could enforce the forfeiture of the press and employment.

In 1665, a house was erected at the expense of the London society, called the Indian Cottage, which was designed for the use of these people; but it was but little used by them.

It was fortunate, in an enterprise of this kind in the infancy of the colony, that so large a portion of its inhabitants were of one mind, and one faith; for all regarded the value of the college far above any other improvement to which they were asked to contribute, and all regarded it with an almost individual interest during the early years of its existence. The college must necessarily be under the supervision of scholars from the English universities, until persons could be reared from its own ranks, who were fitted, by education and discipline, to assume its management; but, since 1654, it has been under presidents who have been reared within its own walls. It seems almost incredible, how much was accomplished by these hardy sons of toil, when we remember that they had not only the work of subduing a wilderness,—of preparing the way for communication between the different colonies, by building bridges, making roads, building houses, preparing their clothing mostly within their own households; but, at the same time, the most vigilant care must be exercised in guarding against the stealthy attacks of their savage foes. A complete history of the progress of this institution, would be but a story of constant persevering toil, both on the part of teachers and their patrons; and a gradual improvement in the building, and apparatus, as well as the number of teachers and their more liberal support.

About the year 1683, and for a few succeeding years, the the college enjoyed the instructions of those remarkable men, the Mathers. Increase Mather was the son of a dissenting clergyman in England, who had been reared in all the rigor and religious faith of the puritans. The character of a noble mother seems to have been faithfully transmitted to the son. The character of his mother may be inferred from her expressed desire with regard to him, for she desired, above all things else, that he should possess grace and learning. This son was named, from a typical condition of the colonies, *Increase.*

It will be remembered that a son of Cotton Mather was an intimate friend of Dr. Franklin. In a letter to Samuel Mather, Franklin thus discourses, in relation to the influence of one of his father's essays, upon his youthful mind, and to it he attributed his desire to engage in useful pursuits. He says, "When I was a youth, I incidentally read a fragment of a book, entitled *Essays to do good.* It had been so little regarded by its former owner, that it was much mutilated, as several leaves were torn out; but the reading of what remained gave me such a turn of thinking, that led me to change all my plans and pursuits for life; for I have always set a greater value on the character of a doer of good, than on any other kind of reputation; and if I have been, (as you seem to think), a useful citizen, the public owes the benefits which I have conferred, to that book." Mrs. Mather is said to have inculcated in her son, the most rigid and systematic habits. She often put him in mind of the scripture lesson of wisdom, "Seest thou a man diligent in his business; he shall stand before kings, he shall not stand before mean men." When Mr. Mather was a candidate for graduation, an order was issued, by the governors, to detain his class most of a year longer than the usual time. This was highly resented by the class, seventeen of whom left the college, rather than comply; but his father, although not favorable to the measure, kept his son in college during the whole period, regarding it as most proper to give no countenance to any act which might seem like insubordination, although a degree of wrong was imposed.

It was not until 1674, that the General Court gave their consent to the establishment of a second press in the New England colonies.

To the honor of religion—pure and undefiled,—it may truly be said, that in every age it has ever been the foe to ignorance and superstition. Multitudes, in every age, may be referred to, eminent for the cultivation of human learning, and equally true to the principles of the Christian philosopher. Mr. Mather was one of this class. He was active in the organization of a philosophical society, which was in the habit of meeting once a fortnight, and of sending and receiving communications from the society of Leyden and the Royal Society of London.

In 1692, occurred one of the most trying incidents in the colonies. In this year, Charles II. called upon them to surrender their charter. Mr. Mather plainly and most decidedly opposed the measure, as a moral wrong. This he once did in a public meeting, called for the purpose of considering the matter, and so forcible and reasonable did his view of the question seem, that when he had concluded his speech, many were melted to tears. The responsibility of his course can only be appreciated, when we reflect that by this act he would surely incur the displeasure of the Crown and its adherents, and expose himself to prosecution for sedition. Mr. Mather was the first person in the colonies who was honored with the degree of Doctor of Divinity; and the ease with which this honor was bestowed, will be inferred, as seventy-nine years elapsed before the honor was again conferred,—the next recipient being Rev. Mr. Appleton, of Cambridge.

In 1715, the clergymen in the province requested Mr. Mather to go to England, with an address from them as a body, to George I., on his accession to the throne. This honor he promptly refused, as he regarded the act as unnecessary and incompatible with their calling, and the position of the colonies.

About the first year of the last century, the college found a faithful and munificent benefactor in Mr. Thomas Hollis, of London, who first sent to his agents, in Boston, twelve casks of nails, and one of cutlery,—the avails of which was to be paid over to the agents of the college. This was soon augmented to £2,000, by small donations at short intervals. He next used his influence and means, in constituting a permanent fund, to be appropriated toward the support of ten indigent students, each of whom was to receive £10 annually. His last acts of munificence to this college were the endowment of a professorship of Divinity, a contribution toward the endowment of professorship of Mathematics and Natural Philosophy, as well as £2,000 for the purchase of apparatus and Library.

The first endowed professorship in Harvard College, and the first in this country, was the Divinity professorship which was founded by Mr. Hollis, in 1707, and which still bears his name, and Mr. Wigglesworth was the first person. During the same year, donations for the Library were received from Dr. Isaac Watts and others, his cotemporaries in Great Britain.

It would seem that corporeal punishment was inflicted here as late as 1674, for under that date is found the following entry, viz: "That Thomas Sargeant being convicted of speaking blasphemous words, shall be publicly whipped, before all the scholars. Which sentence was executed in the College Library. Rod for fool's back."

In the annals of events which preceded the foundation of *Yale College*, we find evidences of the peculiar magnanimity of the persons who were engaged in the establishment of this institution.

It was the original design of the colonists to found a college, at once, in each of the settlements; but wiser councils prevailed, which indicated the propriety of concentrating their means and influence upon one, until, from the extension of population, more should be demanded.

In the first book of records, after plans for the establishment of this college had been made and suspended, as the belief was expressed that they could not support an institution such as they wished, is found the following record under date of November 11th, 1644: "The proposition for the relief of poor scholars at the college in Cambridge was respectfully approved, and it was ordained that Joshua Atwater and Mr. Davis shall receive from every one in the plantation, whose heart is willing to contribute thereunto, one peck of wheat, or the value of it." In March, 1645, Mr. Atwater, the treasurer, informed the Court, that he had sent forty bushels of wheat for the college at Cambridge. In 1648, Samuel White was chosen collector of the college corn, for that year, in place of Anthony Johnson, deceased. It was also ordained, that the college should be called "the school of the church," and all churches were invited to contribute to its support. Ten ministers were nominated and agreed to by both ministers and people, who were to stand as trustees or undertakers, to found and govern a college. This was about the year 1699; and in 1700, they met at New Haven, and formed themselves into a society, which consisted of eleven ministers, including a rector, and agreed to found a college in the colony of Connecticut. This agreement was soon after carried into effect, in a manner peculiarly characteristic of the simplicity of the age. "Each member brought a number of books and presented them to the body, and laying them on the table, said these words—"I give these books for the founding of a college in this colony." The trustees then took formal possession of them, which, with a small addition from other sources, constituted about forty folios, and some money, which, in the language of President Clapp, "laid a good foundation."

The original charter bears date of 1701, when the General Court granted £120, or £60 sterling, annually, until otherwise ordered. The first commencement was held at Saybrook, on the 13th of September, 1702, at which time, six students received the Bachelor's degree. These students had been instructed by the different trustees; and the rector, Mr. Pierson, continued to reside at Killingworth, where he died, in 1707.

The extent to which these classes were disposed, to conform to the exigencies of the times, will be inferred, when we read that the senior class was removed to Milford after the death of Mr. Pierson, in order to be instructed by Rev. Samuel Andrew, who was chosen Rector *pro tem.*, to serve until one could be obtained who would reside at the collegiate school. The other students were removed to Saybrook, and placed under the care of two tutors, so that the students who belonged to different classes in that college, were only assembled at stated times, for examinations and at commencements.

The college continued, in this obscure condition, at Saybrook, until 1713, when a new impulse was given to the enterprise by several considerable donations of books. In

1714, a still more liberal addition was made to the library, through the influence of Jeremiah Drummond, of Boston, then the colonial agent in London. He sent eight hundred volumes, one hundred and twenty of which were at his own cost. Among the donors of this collection, were associated some honorable and worthy names, including Sir Isaac Newton. The gifts of books, for that year, was completed by one from Governor Yale, of about forty very valuable volumes. The number of graduates, from 1702 to 1713, was forty-six, of which number, thirty-four became ministers.

A home for the college was not yet established, and although an impulse was given to the enterprise, by the above donations, an impediment to its immediate progress was presented, by a rivalry of several towns, for the place where the college should be fixed. Although *Saybrook* was not a favorable place, its claims were strongly urged, together with *Weathersfield*, *Hartford*, and *New Haven*. Those who advocated its location at each place, were often influenced by circumstances of pecuniary or personal accommodation. These manifestations of dissatisfaction having become apparent among the students, the trustees met at Saybrook, in 1716, and gave permission to such as were discontented to go to other places for instruction until the next commencement. Pending these manifestations of dissatisfaction, the people in the several parts of the colony, adopted the very proper plan, of subscribing for the erection of a college, such sums as they were disposed to bestow to given places. When these subscriptions were closed, it was found that Saybrook and New Haven had the largest sums, when others were induced to transfer their subscriptions to one of these places, which they did in sums which accorded with their comparative estimate of the places. When this plan was completed, New Haven was found to have £700 and Saybrook £500 sterling. At a commencement, held at Saybrook, the 12th of September, 1716, the trustees agreed to meet at New Haven the following month, when they voted, "that, considering the diffiulties of continuing the collegiate school at Saybrook, and as New Haven is a very convenient place, and as it has received the most liberal donations, the trustees agreed to remove the school to that place." This measure met with a strong opposition from places which had competed, and the contest was so sharp that the minority of the board of trustees, repeatedly remonstrated with the general assembly on the subject.

In 1718, a new direction was given to the question, by a large donation, in books and merchandise, which was bestowed by the Honorable Eliphalet Yale, of London, who was then Governor of the East India Company.

In September, 1718, a splendid commencement was held at New Haven, when the name of the college was formally changed to YALE, in honor of the munificent donor of that name. The opposition, however, was not quite silenced, for a sort of commencement was, at the same time, held at Weathersfield, where five diplomas were granted. In order to conciliate these persons, the evidences of graduation was granted them from Yale. The last manifestation of opposition was shown when the library and other effects of the corporation were removed from Saybrook; for so great was the feeling there, that although it was done under the direction of the sheriff with legal process, they were obstructed by a mob, and some hundred and fifty valuable books and manuscripts were taken by unknown persons, and never recovered.

The incidents which transpired during the next half century, in the history of this college, were not such as to demand more than a passing notice. The presiding officers during this time, were as follows:—Timothy Cutter, L. L. D., was elected Rector, 1719; Elisha Williams, 1726; Thomas Clapp, 1740.

President Clapp was ardently devoted, not only to his calling as a teacher, but to various improvements in the mechanical and useful arts. He is said to have constructed the first orrery in America. When a drill, being out of repair, could not be mended by any mechanic in the town, he undertook and succeeded in the task, as well as added some new value to the instrument.

President Clapp was succeeded by Nepthali Daggett, who was installed in 1766, and resigned his office in 1777, but retained his place as professor of Divinity, to which he had been chosen when but twenty-eight years old. The character of President Daggett may be inferred, when we are informed that he was chosen at that early age, by a body of men who were distinguished alike for their classical as well as their theological learning. His presidency was at a time, as the dates will indicate, when the country was agitated by the incidents which preceded the war of the Revolution, and his voice, in common with that of the New England clergy, was used with good effect in stimulating his countrymen to the defence of their homes. On the 5th day of July, 1779, about 2,000 British soldiers, whose only object seemed to be plunder and wanton acts of cruelty, entered New Haven. They were only resisted by a few feeble militia and citizens, at the head of whom was the venerable professor of Divinity, who nobly used his musket until compelled to surrender it. When taken prisoner, he was cruelly treated, which was probably the cause of bringing him much sooner to the termination of his valuable life.

The incidents connected with the Revolution were not calculated to favor those acts and employments which would directly promote the foundation and patronage of a college. Still, the people of the colonies were deeply impressed with the importance of maintaining that civil and religious liberty, to secure which they had left their homes across the Atlantic and taken up their abode in the wilderness of the western hemisphere. They had sacrificed too much in order to secure these privileges, to be induced to lightly yield that which to them was dearer than life itself; for it was not for themselves, but for their posterity, they had endured so much.

After seven years of almost entire suspension of the exercises of the college, President Stiles resumed its government, and new life seemed to have been infused into it, immediately after peace and liberty had been established. President Stiles died in (12th May) 1795, at which time, 2,372 students had been educated here. Dr. Timothy Dwight, who succeeded, represented, that President Stiles was probably the most learned man in America, and exceeded by few in the world. Dr. Dwight was not only a finished scholar, and efficient president, but an ardent patriot, as may be inferred from his authorship of that patriotic song—

> "Columbia, Columbia, to glory arise!
> The Queen of the world, the Child of the skies,"

which was so universally taught by mothers, to the children of the last generation.

At this time, there was but one professor in the institution, who, with the president and three tutors, conducted the department of instruction in the college.

Tutorships were mostly accepted on account of the temporary support, and perhaps some literary advantages, which they afforded, and were consequently quite temporary.

Dr. Dwight applied his vigorous powers to the enlargement of collegiate advantages. In 1803, Rev. Jeremiah Day was chosen to the Chair of Mathematics and Natural Philosophy, a professorship which had been founded by the General Court, in 1770, and occupied by Mr. Meigs, who had just accepted the presidency of the University of Georgia.

In 1804, Benjamin Silliman was chosen professor of Chemistry and Mineralogy, and immediately visited Europe in order to improve himself in his department.

So much had the institutions of this country been under the influence of venerable follies, that, until the time of Dr. Dwight, the printed catalogue of students was arranged according to respectability of parentage, and freshmen were compelled to perform menial offices for the two higher classes. This absurd and unjust rule was not abolished until 1804.

The first degree of M. D., from this institution, was conferred, in 1723, upon Daniel Turner, of London, who had bestowed a liberal donation of books upon the college.

A Law department was established, in 1801, and Elijah Goodrich appointed instructor.

In 1810, a medical society was incorporated, which resulted in the establishment of a Medical department, and the first course of lectures was delivered in 1813, to thirty-six students. This arrangement was mostly accomplished through the exertions of Dr. Nathan Smith, who was a striking example of what one individual of untiring industry may accomplish. In 1829, the Medical department was made still more complete, by the appointment of Drs. Hubbard and Tully. The latter held his place till 1848, when he retired to Springfield, Massachusetts, in order to engage in the publication of his American Medical Botany, in which employment, although at an advanced age, he is still engaged.

I have thus rapidly glanced at the prominent incidents connected with the origin and development of these two leading institutions of our country. Time will not admit of a satisfactory reference to others,—the history of which would be no less interesting, although not so directly connected with the early characteristics of the American colonists.

I have chosen to give you this narrative sketch, on this occasion, for the purpose of presenting the fact, that the most important, because the most useful, enterprises in which we may engage, and to which our most active energies ought to be directed, are seldom brilliant or attractive in their beginning, because every thing useful involves labor and sacrifice.

Our ancestors seemed to regard the support of their institutions of learning as demanding their first care, after the supply of their daily natural wants; and to this their solicitude are we indebted for the position we hold, as a nation, among the many enlightened nations of the globe.

Their varied toils, we are not called to endure. They have set us a noble example,—and shall we prove worthy of our more than noble ancestors?

Institutions of learning are no less needed, because so abundant and diversified in their character; and every good citizen, of whatever age or condition, is bound by a principle of honor, to foster and support, by patronage and means, such as are in their midst.

Institutions for instruction in the dental art and science are of recent origin.

The idea of the necessity of such institutions, seems to have been first cherished by your worthy teacher of the Institutes of Dental Science, Prof. Taylor, who proposed to Dr. Chapin A. Harris, member of the Baltimore College, to engage in such an enterprise. After various conferences, in which, plans were somewhat perfected, it was found that their individual preferences, in choice of location, could not be gratified by a union in the enterprise, which very properly led to the almost simultaneous establishment of the two colleges. The history of these institutions, so far as individual sacrifice is concerned, is but faithfully written in the narrative I have given you of other colleges. We can not claim from the general public that patronage which has been so liberally bestowed upon primary and general literary institutions. Ours is a special department of education, and in such the general public will take but little interest. From the midst of our own ranks, must we mostly look for the aid and comfort which we must have, in order to render our labors as useful as they ought to be; and, so far as you are concerned, shall we be disappointed? Will you, when your term of study with us has expired, and as you go forth to reap some of the benefits we may have conferred upon you, fail to regard your Alma Mater as an object of solicitude and care?

ADDRESS

Before the Cincinnati Association of Dental Surgeons, formed September 3d, 1858, by its first President,

DR. C. BONSALL.

Fellow Members of the Cincinnati Dental Association :

GENTLEMEN : Having been requested by you to prepare an address for our Association, at its first regular meeting after organization, I have thought a comparison would be profitable of the condition of the profession, and the facilities which are enjoyed by those of the present day, who wish to commence Dental practice reputably, compared with those which were attainable in former years, and which improvements are mainly to be attributed to to the influence exercised directly and indirectly by the associating together of liberal minded Dentists for similar purposes to those which have induced you to unite in this Society.

The Society known as the American Society of Dental Surgeons, having been the first combination of Dentists for this purpose with which I am acquainted, and feeling conscious that the fact of having been elected as one of its members at an early day, was one of the means of liberalizing my own views, from the anxiety it produced in me, that I might become worthy to meet with such bright ornaments to the profession, as many of the earlier members of that society were, I have been induced to turn to the early records of the society, which happen to be in my possession, and shall copy here the remarks made before the few honorable dentists who had come together from different States of the Union, in the City of New York on the 18th day of August, 1840, for the purpose of forming a Society for mutual improvement, and to endeavor to ennoble the profession ; by that ornament to the profession the lamented Hayden.

In the first place I will mention that the initiatory steps to this meeting had been taken by Dr. Horace H. Hayden of Baltimore, having sent invitations to some thirty-five or forty of the best known members of the profession from almost all parts of the Union, which resulted in the coming together of fifteen to twenty of those who had been invited, at that time, at the American Hotel in New York.

Before adopting a Constitution, Dr. Hayden took the opportunity of making the following statement:

"The formation of a National Society of Dentists, he remarked had been long a favorite project with himself, and he was happy to say, that he had never found himself wholly alone in this desire. As long ago as the year 1817, he had consulted with the late Dr. Edward Hudson, of Philadelphia, who was favorably inclined to such an association.

Other gentlemen of the profession, however, were not inclined to make an effort in the business, although gentlemen of the Medical Profession, to their honor be it spoken, uniformly approved of the plan.

The prospect of succeeding, however, appearing rather unfavorable, he had mostly relinquished the plan until, finding that his son manifested a desire to pursue the same profession, and contemplating a tour to the North, in 1829, he resolved to make another effort amongst his professional friends and acquaintances, and in this instance, he met with much more encouragement; but not sufficient, however, to justify a belief that the plan would succeed until the year 1838 when in a to tour the North he made the last attempt.

The speaker adverted, in the next place,, to the condition of the dental art, at the time when he entered upon its duties forty-three years ago. *Then*, said he, the name of dentist was a reproach and a bye-word. But viewing it as a subject susceptible of great and beneficial improvements by well written essays or works, and not knowing at the time whether any such had ever been published, he applied to the elder Mr. Greenwood, of New York, then dentist to Gen. Washington, who informed him, that he knew of but one work that had ever been published, and that was Dr. John Hunter's work on the natural history of the teeth, which he procured. Soon after he obtained possession of some few other works, both in French and English.

From that time he has seen the science assuming more and more importance in the public eye, whilst men of learning, worth, and genius, have been added from year to year, to the rank of its Professors.

At the present period, continued the speaker, renewed efforts are making in England, France, and Scotland, to place our profession on still higher ground than it has yet attained; and shall we of these United States of America, remain inactive in this grand endeavor.

For myself, said he, I can not brook defeat in this favorite undertaking. I prefer rather to make renewed and redoubled efforts to secure success. If, like the Jews, we are scattered and despised, may we not, like that persecuted people, at least hope for a day of restoration to our promised land. There are many obstacles, indeed, still to overcome. A new race of Canaanites must be expelled from our borders. Many errors must be exploded, and much ignorance must be dispelled, before the light of truth will beam clearly upon our path; but with diligence, zeal, and perseverance, we are certain of ultimate success.

Let us, therefore, go forward in the good cause, unintimidated by the skepticism of the faithless, the fear of the timid, or the apathy of the selfish.

If there are *some* who prefer to plod onward in the path of private enterprise, *let us* unite our efforts in one great social endeavor, to elevate our profession from the degraded condition to which it has sunk, and in which it must ever remain, until the high-minded and well-educated among the practitioners shall unitedly rise and shake themselves from the dust."

Dr. Hayden then called for the reading of the Constitution which had been prepared by a committee; the first article of which was as follows:

"The objects of this Society are to promote union and harmony among respectable and well-informed Dental Surgeons; to advance the science of free communication and interchange of sentiments, either written or verbal, between members of the Society,—both in this and other countries; in fine, to give character and respectability to the profession, by establishing a line of distinction between the truly meritorious and skillful, and such as riot on the ill-gotten fruit of unblushing impudence and empiricism."

The Constitution, then adopted, was signed by fifteen members.

To show the feeling and and interest felt by some of those present at this first meeting, I will quote a few words more from some remarks made by another of the bright ornaments of the profession, Dr. Eleazar Parmly, of New York: he said, "May not a noble pride be felt by our children, and even our children's children, when they read that their ancestors were the little band who met, from distant cities, to rescue a noble science from the degradation to which it had been reduced by ignorance, selfishness, and quackery; and will it be no source of pleasing recollection to ourselves, that on such a day of such a year, we met each other, in this place, and signed a document which declared us members of a profession which afforded ample scope for all the moral, intellectual and physical energies of our nature to be engaged for the general good of our fellow men."

This Society—having broken the ice, as it were, by showing the profession what might be gained by social and professional intercourse, State and other local Societies very soon followed in its footsteps, and, also, having been the means of starting the first periodical devoted to Dental Science, the "American Journal,"—continued during a period of sixteen years to exert an excellent influence over the profession; and finally gave place to the present "National Dental Convention," with the character and usefulness of which, you are all acquainted.

In our own city, a Society was formed, in 1844, composed of most of the Cincinnati dentists of the time, and continued its meetings, for some time, with benefit to the members; but finally dissolved, owing to little jealousies very natural to the then situation of the profession, which had just recently emerged from a condition in which no two dentists, hardly in any city, were on pleasant social terms. There was one lasting benefit, however, which grew out of the meeting of Cincinnati Dentists together, during the continuation of the Society, which was, the call which enamated from them to the dentists of the Mississippi Valley generally, and which eventuated in the formation, in August, 1844, of the "Mississippi Valley Association of Dental Surgeons," which, I am satisfied, has been of very great advantage to many members of the profession, scattered over the West and Southwest. But of this Society, also, I need not speak, as you are all acquainted with it.

At the present time, there are a large number of dental associations, over the United States (and recently, one or two in England) which are constantly exerting a useful influence over the younger members of the profession particularly, and even the oldest and most experienced dentist can hardly attend a meeting of any one of these Societies, without receiving some useful hints, in addition to which the social communion and acquaintance consequent upon the meetings, induces an improved manner of speaking of each other's operations, which serves to place dental practitioners, as a class, on a much higher level than they formerly were, in the estimation of the community generally. In addition to the advantage enjoyed by dentists of the present time from societies, there are others which were not known twenty years ago, in the opportunity given by the Dental Colleges; and also from periodicals devoted almost exclusively to dental science, of which we then had none, and now we have six or eight, which are well established.

With some additional care on the part of respectable practitioners in taking students, viz: declining to take any one as a student unless he has the education and manners of a gentleman,—there will be, in a few more years, a still further improvement in our operations, and also in the estimation in which the Dentist will be held by others. That this advance, in character and estimation, may be deserved, is the ardent wish of your fellow member.

SIGNS OF LESIONS OF NERVE CENTERS.

BY PROF. C. B. CHAPMAN.

WE have already described the offices performed by the different nerve centers, which has suggested the fact that there are four distinct functions contributed by these axes, as they exist in the higher animals and in man, besides those which are furnished through the agency of the nerves of special sense, or those which contribute to the functions of *vision*, *olfaction*, and *audition*, each of which seems to be independent and distinct in itself. Beginning, therefore, in the animal scale, we find the excito-motor, or spinal system, independent in the origin of each nerve for these separate functions of sensation and of motion, but united after passing but a few lines from their origin. Lesions of the spinal center will exhibit different phenomena which will accord with their location, whether it be in the anterior or posterior columns, or whether both columns are at the same time involved. Lesions of the spinal centers have been named centric and eccentric. The usual phenomena which may result from such lesions, will be learned by a few carefnl experiments upon living animals, for the functions of the spinal cords are found to correspond, from man down to the lowest vertebrate, the only difference consisting in the amount of control which can be exercised over this by the encephalic centers. If an afferent or sensitive branch of a spinal nerve be divided just before it unites with its efferent fellow, sensation of the part to which such nerve is distributed will be impaired or lost, but the faculty of motion may still exist. If instead of the afferent nerve, the efferent has been divided, power of motion will be destroyed, but sensation may preserve its integrity. If, however, the lesion be made just beyond, or at the point of union of the sensitive and motor branch, both functions beyond that point will be destroyed, but the stump of the sensitive branch will still respond to irritants, and the stump of the motor branch will maintain, and may exhibit its functional integrity, provided there be the smallest amount of contractile muscular tissue along its course upon which it can act. Injury or disease of a nerve trunk, far away from its center, may produce perverted sensation, or impaired or perverted muscular action. Injury or disease of the spinal cord, or a limited portion of this center, may produce the same phenomena, although it will be more likely to produce loss of sensation and motion. We are, therefore, in many instances, deprived of such exact measure of knowledge with regard to the sources of these phenomena, whether they be centric or eccentric. The sources of such phenomena will sometimes be so apparent, that they can not be mistaken by the most inattentive observer, while in other cases, their obscurity may be such as to place them beyond the knowledge of the most careful investigator. Much aid may be afforded in such investigations, through a careful knowledge of its antecedents, provided the condition was produced by traumatic injury. A lesion, situated in one of the lateral columns of the spinal cord, will produce loss of motion only if such lesion be confined to the anterior lateral column, but the effect will be loss of sensation if the injury be situated in the posterior lateral. If, however, both columns of one side be involved, there will be loss of sensation and motion of that side, and such condition is called *hemiplegia*. When the upper or lower half of the body is paralyzed, a lesion of the four columns of the cord may be suspected, and the disease is denominated *paraplegia.*

It will often be difficult to distinguish whether irregular nerve action is the result of centric or of eccentric lesion.

If the result be loss of sensation and of motion, the lesion is most commonly in the center—it is centric. If the manifestation be irregular motion, (which constitutes chorea or St. Vitus' dance) the trouble may be at the root, or along the nerve—it is eccentric. These phenomena, however, are by no means uniform, for the most careful investigators are well aware how uncertain and even impossible, with our present knowledge, it is to know the situation of a lesion with entire certainty by its manifestations, although the diligent student may learn wherein there are exceptions to this general rule. The condition of the being may at once afford unmistakable evidence of the origin or cause of irregular action, but the phenomena observed will afford us no certain evidence. Manifestations of centric lesions are commonly more palpable than those of the eccentric kind. We have, however, one well marked exception in that dreadful malady, which results from the injury of a remote nerve, called *tetanus* or lock-jaw. We have in this condition, a well marked example of the *eccentric* or reflex manifestation of nerve power. Such injury will induce that muscular contraction peculiar to this disease, first through the agency of the nerves connected with the posterior columns of the spinal cord. These are the nerves of sensation. The irritation thus transmitted to this center is further conveyed, through the agency of the connecting fibers within the cord, to the anterior or motor column, by the agency of the nerves of which the irritation is reflected back to the point of injury, so that by the combined action of the two systems that phenomenon is produced which is so characteristic of this dreadful malady. In this disease, notwithstanding the injury is remote from the spinal cord, this center, while uninjured itself, becomes an instrument for the most grave manifestations through the further agency of the muscular system.

These are questions which ought to engage the most careful investigations of the naturalist, the physiologist, and the practitioner, in order that they may be enabled to require rules by which he can (approximately at least) determine the location of the cause of these manifestations, and whether they originate in a center or in remote nerves. We have no evidence that lesions of the spinal center ever extend their effects upward to the cerebrum and cerebellum, except so far as they may be effected in common with the whole organism. Not so, however, with regard to the influence of the higher centers upon this, for if the cerebellum be injured, the principal evidence of its lesion will be found in the perverted operations of the spinal system, and this we would infer when we remember that it is the office of this center to preside over the spinal system, in a way that will secure harmony of muscular motion.

Malformations, or injuries of the *cerebellum* or *cerebrum*, may transmit their effects to the spinal system, which may furnish the only evidence in our possession of the existence of such lesion. Such lesions are the common cause of that obscure and thus far undefinable disease, called epilepsy.

A SYNOPSIS

Of some remarks made in a preliminary lecture to the Class in the Ohio College of Dental Surgery—Session 1858-9,

BY J. TAFT.

DENTAL ETHICS.

The relation which the dentist and his patient sustain to each other, if not in theory, certainly in practice, is too often wholly overlooked by both parties. It is a relation in which there are duties and responsibilities devolving upon both.

When they assume that relation, each is indebted to the other, and they should both see to it, that the obligation is promptly honored. There are some things which the dentist has a right to expect from his patient; and the first we will mention is confidence—a *reliance* in his ability to do what he undertakes. I do not intend by this, that the patient should always believe that the operator has the ability to do every thing, but that it will be done it as well as by any one else, under the circumstances, and that the operations, when well cared for, and with favorable circumstances, will accomplish the design.

The patient should rely upon the judgement of the dentist who is to operate for him, and always yield to his opinion. It is the province of the dentist, to determine what is for the interest of his patient, at least so far as his teeth are concerned, and the duty of the patient to submit to the course suggested; if he does not, and from a want of confidence, he should not apply. It is proper that the patient should make suggestions, when it is presumed he has correct knowledge upon the subject; even then, however, the dentist should be the umpire.

The patient should have the most implicit confidence in the integrity of his dentist. The opportunity to practice imposition upon his patients, is constantly before him, and he who would take advantage of it, should not be trusted with the care of the teeth.

With the man, with any thing like correct principles, when he knows that his patient is relying implicitly upon him, in a matter so important as the welfare of his teeth, it is a stimulus to act uprightly; while suspicion would have the opposite tendency.

The patient should, at all times, be ready to appreciate good dental operations, and in speaking of them, give the dentist his just meed of praise; this is but justice to the operator How often the opposite is done. We have oftentimes heard remarks, such as the following: "Oh yes, I have had my teeth filled, but I do not suppose it will do them any good."

Now, the patient, by such remarks, does the dentist great injustice, or does himself great injustice, by submitting to his operations; and when an operation has not fulfilled the expectation, great care should be exercised in speaking to others about it, unless the patient fully understands the subject in all its bearings. Much injustice is often done to the dentist in this respect. It is very seldom that a patient can understand all the circumstances that may influence an operation in his own mouth. Not one in a hundred is capable of doing this.

The following are some of the common circumstances that, to a greater or less extent, may affect the permanency, of fillings in the teeth. Teeth of imperfect structure, and easily acted upon by injurious agents; changes of the system, predisposing the teeth to decay; vitiation of the secretions of the mouth; the difficulty of operating, in some instances, owing to an unfavorable location of the cavity, thus preventing a definite view, and accurate manipulation.

The advanced stages of decay, and the difficulty of filling such teeth. The teeth are not always properly cared for, even after a good operation has been performed.

The operator is not always in a favorable mood for performing operations in a perfect manner. Every one is familiar with the fact, that improper temper, or nervous irritability, unfits for delicate and skillful operations. Yet the dentist is almost compelled to operate while in these conditions. Dental practice severely tries the patience and self-government of the operator.

It is the duty of the patient, always to co-operate with the dentist, for the permanency of his work, by keeping the teeth in good condition, so far as cleanliness and freedom from deposits is concerned.

No one has a right to complain of his dentist, if, after an operation, he has neglected his teeth. And no dentist who understands the obligations due him from his patient, would touch the teeth of such an one, without a very favorable prospect of reformation.

The patient should always be willing to pay the fee for a good operation.

No dentist will charge more for a good and efficient operation, than it is worth to the patient; indeed, no patient ever pays the full value of efficient operations; and the dentist usually knows better than any one, what his fee should be.

I refer now to *true men*, and not to those things, self-styled dentists,—whose operations, worse than worthless, are very dear at any price, indeed, costly without any fee at all. If the patient has the confidence in the moral honesty of his dentist he *should* have, he will not hesitate, for one moment, to honor his bills.

No one, who feels that his fees are low and grudgingly paid, will feel the same stimulus to improve and aim at a high point of excellence, as though it were otherwise. No operator can devote his time, labor, and material, to fill a tooth as well for one dollar, as for five; and yet the preservation of a tooth is worth vastly more, to any one, than this.

There are some obligations devolving upon the dentist to his patients.

The dentist should always manifest toward his patient, the bearing of a perfect gentleman. This is a suggestion applicable in all our intercourse with mankind, but, in a very high sense, it is true in regard to the dentist, whose contact with his patients is of so peculiar a character.

Kind attention should ever characterize the dentist; yet no unbecoming familiarity, nor sycophancy or fawning,—such a bearing is always disgusting to persons of a just appreciation of character.

Always exhibit sympathy for the suffering; yet permit not that sympathy to interfere with the prompt and efficient execution of an important operation; indeed, true sympathy stimulates to the most, through work.

True sympathy does not consist in honied words, and feeble, inefficient attempts to relieve from suffering,—but in prompt, energetic action, every stroke of which tells upon the work to be done.

The dentist should be prepared to fulfill the just expectations of his patients,—presuming the patient to be an enlightened one.

It is true, that persons, intelligent in other matters, but ignorant in regard to their teeth, oftentimes expect too much. It is the duty of the dentist, to correct such mistaken or false notions.

It is a very just expectation of the patient, when he applies to the dentist, that he will receive benefit or good at his hands,—either with reference to the preservation of the natural organs, or supplying the place of those lost, with artificial substitutes.

In no case should the dentist attempt to practice deception upon his patient. This, however, is frequently done, and the ignorance of the patient is given as an excuse. But we should remember, that any one, however ignorant he may be, who finds himself the subject of deception, will have rather a poor opinion of the moral uprightness of the operator, and will not be very likely to place himself in the power of such an one a second time.

But it is maintained, that it is better, oftentimes, to deceive children, in order to accomplish the desired end; indeed, we are often requested, by parents, to do this. It is better to employ force, if need be, to perform an operation for a child, than deception; for, it will invariably be found, that when the latter is once employed, for the next operation, force will be required; and if the child ever submits quietly to an operation, it is under the suspicion that a deception may, at any time, be practiced upon him; and the operator will find that it will be a long time, even with the most prudent action, before he can secure the confidence of his young patient.

The dentist should always perform his operations, in the best possible manner, under the circumstances. All operations upon the teeth can not be made alike perfect. The aim should be, to make every operation subserve a valuable purpose. I have noted, elsewhere in this paper, some of the circumstances that will modify the efficiency of an operation.

The manner has much to do with the success of the dentist. There are a great many little indescribable peculiarities of manner, that should not be overlooked, or disregarded. Those little amiabilities that we so much admire in all, should be especially cultivated by the dentist. These are things that will have their influence upon all classes of persons. Have much care for personal appearance. The attire should be clean, neat, and tasty, yet not flashy.

Cleanliness of person should be scrupulously regarded. The dentist who is slovenly and dirty, is so at his own cost. Some examples might be given here, but we leave the reader to supply his own illustrations.

Keep the hands perfectly clean, smooth, and soft; any one with rough, stiff hands, can not manipulate as delicately and skillfully, as though they were in good condition; with the latter condition, the sense of touch is far more perfect.

Much care is often necessary, to remove unpleasant odors from the hands, that may be contracted from a diseased mouth. No one likes to have dirty, offensive hands in the mouth, no matter how dirty it may be.

Keep the teeth clean, and in perfect condition. The advice and suggestions of the dentist to his patient, in regard to his teeth, come with rather a bad grace, through a set of dirty, filthy, unsightly, ragged teeth.

Keep a pure breath, as far as possible; and, in order to do this, use tobacco in no form, nor alcoholic spirits of any kind, nor any of those peculiar little luxuries that render the breath like a blast from a stygean pool. Common decency forbids that any one should blow the contaminated breath, from his own polluted carcass, into the mouth of those of natural tastes and delicate sensibilities. These things observe, and forget not.

Endeavor to make your patient as comfortable and as much at ease as possible, while in your presence. This is worthy of your attention.

We often hear remarks like the following: "I would much rather undergo the operation, than to endure the operator during the time." Of course, the patient would avoid such an operator, in future, if possible.

And now, gentlemen, if the hints and suggestions, given to you in this crude form, shall aid you, even in a slight degree, in forming your professional character, they will have accomplished their design.

"DENTAL QUACKS."—*Continued.*

"Myself I throw, dread Sovereign, at thy feet;
My life thou shalt command, but not my shame;
The one my duty owes; but my fair name
(Despite of death, that lives upon my grave),
To dark dishonor's use thou shalt not have,
I am disgraced, impeached, and baffled here;
Pierced to the soul with Slander's venomed spear;
The which no balm can cure,—but his heart-blood
Which breathes this poison."—*Shakspeare.*

MESSRS. EDITORS: Permit me to introduce myself to you and the readers of the *Register*, as the "Dental Quack," the "twin brother" to another "now on the black-list," as well as one among the "villains," "rascals," and dishonorers of their alma mater, referred to in the article on "Dental Quacks," in the last number of the *Register*, and designated "Dr. C." You will please not, however, consider this introduction as an acknowledgment, on my part, that *I really am* said "Dental Quack," etc. Neither need you consider it as a preliminary step to exonerate myself from the charge,—(as I have every reason to believe I will be saved this trouble by the honorable editor of "a country newspaper," through whose inadvertency an opportunity was afforded for it); but you may consider it as opening the way for the expression of a few

"Thoughts that have tarried in my mind,"

Since the appearance of the article under consideration, in regard to the malicious spirit which undoubtedly prompted, at least, that portion of it referring to "Dr. C.;" and to the effect on the profession, of making the Dental press, under the very propitious garb of "guarding our dental colleges, the medium of gratifying a private malicious feeling, especially on the part of an old and established practitioner, toward one who has but made his *first* advertisement to the world.

I am free to acknowledge, here, that the prosecution of my intention, as intimated, is fraught with several embarassments. (In consideration of which, I would feign ignore the injustice done myself; but a demand, on the part of friends, for justice, and the hope to benefit the profession, by cautioning it against sounding false alarms, will not allow me so to do.) Namely: 1st, The article, with a few *decided exceptions*, *reads* well enough, and its tendency seems to be that of "guarding our dental colleges." 2d, The age and standing of the writer demands *my* deep respect. And, 3d, *He was my own preceptor.* (In another point of view, these considerations *aggravate* the matter.)

In proof of the assertion, that a malicious feeling prompted the charge of quackery against me, I shall embrace the privilege afforded by our common law, and appeal to my past character; and having proved that *good*, by the *same* evidence shall show that the originator of this charge knew my character, *and that had he not been predisposed to injure me*, would neither have supposed me guilty, nor *exposed* my guilt *without a previous warning voice*, had he been satisfied of it. Before presenting this proof, however, it will be necessary to state a few facts explanatory of it.

At a certain stage of my precious (?) and inglorious (?) dental career, it was my lot to meet with, in Cincinnati, and form the acquaintance of Dr. H. R. (which, *as far as it goes*, is the initials of him, who, while he professes to "protect the innocent, and *love the profession*, eagerly grasps, and hurls before the public, a fact, in a manner not only well calculated to brand, as an infamous *dental Quack*, one whose "first entrance into the profession, was to attend the lectures at the Ohio Dental College, during the session of 1856–7; but equally well calculated to stifle in the heart what little aspirations,—peradventure he may have had to attain to the full stature of a *man* in the profession!

Dr. H. R. proposed to me to accompany him to his home, in a neighboring State, for the purpose of pursuing my studies with him. The suggestion meeting my approval, I accompanied him thither. There being no article of agreement between us, it was tacitly agreed, that I should bear my own expenses, and remain with him as long as it was agreeable to those concerned. I had been with him but a short time, when he changed his place of business, leaving me with his brother, at the old stand. Becoming dissatisfied with the amount of practice I was receiving, in compensation for my expenses, I expressed a desire to quit the office to Dr. H. R., by letter; and received, in answer, a letter, from which I make but sufficient extracts to prove an honorable release:

"..........., July 29th, '57.

"FRIEND.......: Your letter of the 27th is just now before me, and I hasten to reply. You seem dissatisfied with....., and for the reasons you state, feel that it would be better for you to leave. I am sorry that the circumstances are such, that we could not offer such inducements as would be satisfactory to you to remain; but I fear they will not be so, soon, enough to meet your necessities. I can not advise, further than that you consult your interests in the matter, entirely. Wherever you go, you will have my good wishes for your welfare and prosperity."

(I pray thee, doctor, *withhold* thy "good wishes" for my "welfare and prosperity," *if, to express them*, "more stringent means may be called into action," than "the gentle hint" you have already given me by way of paternal chastisement.)

I am now ready to prove the maliciousness of the feelings which prompted the charge made against me; and I deem it most expedient to do this simply by giving Dr. H. R.'s expressed *friendly* feelings toward me,—by calling attention to the relation of preceptor and student as it existed between us!—*and by claiming that it was utterly incompatible with this state of things, that such a charge should be made,*—and that, too, without the least effort on the part of the maker, to ascertain whether or not I was a *quack at heart.*

> "Give me *good* proofs of what you have alleged.
> 'T is not enough to say in such a bush,—
> There lies a thief,—in such a cave, a beast."

Dr. H. R.'s expressed friendly feelings toward me, may be found in the following quotations, which I make from a letter, written by him to myself. (The quotations will also serve as the premised proof of my previous good character, etc.):

"..........., July 5th, '57.

"FRIEND ....: Your very welcome letter reached me in due time. You speak of my friendship for you, and of the value you place on my advice, etc. To which I would say, that, with the acquaintance which I had with you, while here, I formed a very high estimate of your moral and intellectual worth; with your decision of character, and invariable gentlemanly bearing, not only toward me, but toward all with whom you came in contact. And, to your further credit I will say, that as yet I have had no cause to think otherwise. To such a character, it is no way strange that I profess my friendship and assistance."

(I pray thee, doctor, *withhold* thy "friendship" and "assistance," *if, to express them*, "more stringent means may be called into action," than the "gentle hint" you have already given me, by way of *friendly assistance.*)

The charge *not being compatible*, therefore, with *these* feelings, *certainly* is *only compatible with the opposite.*

It remains now, for me to briefly state some of the *effects on the profession* of this kind "love" for it, *thus* expressed. The philosophy (!) used in doing this shall be of no doubtful sort, but emphatically *inductive*, myself being the subject of experiment, I have already intimated a prominent effect of this *quackery* on the profession, namely, its tendency to *effectually smother*, in its victims, any ambition they may possess to rise in, or benefit it,—by sapping the foundation of character;—

> ...."That away,
> Men are but guilded loam, or painted clay."

It is unnecessary to say the Dental profession is in its infancy; and that it becomes all "lovers" of it, to fain receive, and not hastily judge, such material proffered for its upbuilding.

Will Dr. H. R. contend that his palliation, of designating me "Dr. C." instead of Dr. D., after following me, *step* by *step*, since my "first entrance into the profession," (in which "following," *he* has narrowly escaped, if at all, catching the quack disease), militates against my assertion, that his charge tends to sap the foundation of my character? If so, I fear he "hasn't traveled" as much as his article; and some of my dental friends, who readily recognize Dr. C., and as readily made known the *joke* to those, whom *most* have I desired to know me, as Cæsar's wife was known, to be not only innocent, *but above suspicion.*

An other effect of such a hasty "reading out" of the profession, is the subversion of the true intent of the Dental press, which is to *build up* the profession; and this, too, not by an eager disposition to *tear down individual members*, even though they be guilty of fraud, *if* "these circulars reach only the profession, while those who are to be most effected are still ignorant of the fraud practiced upon them." Besides, the valuable space taken up by these charges and defenses, is poorly compensated for, at best.

Again,—the *reflex action* of this malicious gratification, *is evil, only evil,* and that continually.

Once more, but for a moment, and I submit the question: In all candor I will anticipate the only answer, to me conceivable, which Dr. H. R. can make to the *worse* than *dental quack* charge which I make against him, namely, "In an editorial notice, in a country newspaper, of a copartnership of Dr. C. with Dr. I. Dr. C. is represented as having had *more* practice than he *really had; this error was never corrected. Therefore*, it seems to be my special province, as Dr. C. was my student, and as I have *expressed* my *good wishes* for his *welfare* and *prosperity*, and as I have *promised* my *friendship* and *assistance*, to give him a *gentle* hint, *secretly*, by way of reformation." I will make but one apology for the strength of the doctor's answer, and abide by the decision of those, who, having read both charge and defense, have all the facts in the matter, namely: The offending "editorial notice" was unsolicited by me; *was not an advertisement.* The statement having been made by the editor, without my knowledge or solicitation, I felt no blame resting upon me for it; nor did it strike me as a duty to demand the editor to make the very awkward acknowledgment, that he had extended weeks of time into years, and made a tyro into a skillful operator, in his notice of me; but I considered it my duty to give the facts in the matter, when questioned upon it, which I always did. Yours, truly, Dr. C. C. D.

............, November 15, 1858.

Drs. Taft & Watt: Having seen an article in the *Dental Register* for September, headed "Dental Quacks," in which a worthy member of the dental profession is severely censured, for publishing, as the writer alleges, a Card containing false statements, for the purpose of securing business,—I beg the privilege of making an explanation of the matter, which will, I trust, wholly exonerate the gentleman thus charged, from all blame. The "Card" alluded to by the writer in the *Register*, was simply an editorial notice, written by myself, without consultation or even acquaintance at that time, with the "Dr. C." referred to. The error, in stating that "Dr. C." had the advantage of "eight years' experience," was entirely my own, and resulted from a hasty reading of some dim pencil writing handed me by Dr. C.'s partner, which stated that "Dr. C." had been a student of

Dr. . . . . ., eight years professor in the Dental College. Dr. C. was entirely innocent of the blunder, and would be, I am well assured, as far from making a false statement to deceive the public, as the writer of the article above mentioned.

Yours, respectfully, ..., Editor, etc.

PORCELAIN TEETH.

BY DANIEL L. PRATT.

It is a common complaint among dentists, that the various manufacture of porcelain teeth now offered to the profession, are all more or less liable to cracks, chequers, and other injuries, occasioned by the heats which they undergo in the process of soldering to stays and gum plates. From the commencement of my practice in this county, which was in the Fall of 1844, I always doubted the propriety of enveloping and heating porcelain in plaster, and tried various ways, from time to time, in hope of finding some better method. The consequence was, that, on the 3d of November, 1853, I had the good fortune to discover a method that is entirely safe,—neither cracking, checquering, coloring, nor in any way affecting their strength. I have mounted about 2,800 teeth, from four different manufactories, since that period, and have broken but two, in all the various operations; one was broken by a drop of sweat falling on it, when red hot, while in the act of soldering; the other, I can not account for.

My mode of proceeding, is as follows: I grind the teeth to the plates, in the usual way; then envelope them in plaster; then take the teeth out of the envelope, and straighten up the pins with a small beaked forcep, so that the backs be easily relieved from them. I then fit the backs to the teeth, but don't rivet them. I then take wax, prepared from beeswax and gum sandarac (equal parts), warm it till quite soft, then stick the backs to the gum plate as they lay to the teeth, then cut the plaster away, then remove the teeth. I then take small pointed pins, made of ivory or bone, one-fourth of an inch in length, and pass the points through the pin-holes into the wax, to hold the backs in proper position, while soldering to gum plate; then take plaster, two portions, and brick-dust one portion; lay the work on a porcelain slab, and a ring around it; mix the plaster and brick-dust to the consistence of cream, with water, and pour around it; when the plaster is sufficiently hard, remove the wax, clean the work, and solder; then take off the plaster, clean the work, and rivet the teeth to the backs. I then take Spanish white, three portions, and brick-dust sifted through a piece of bolting-cloth, one portion, mix with 98' alcohol to the consistence of cream; then take a large camel's-hair pencil, and cover the porcelain in every point,—the work will be ready to heat in a few minutes. My reason for employing the brick-dust, is to prevent shrinkage with the plaster and whiting, besides, it retains the heat much longer than either article separate; when the teeth are soldered to the backs, I treat the work in the usual way. I have found work, put up in this way, to be much less liable to breakage, than that which I have heated in plaster. I warrant my work, for an indefinite time, against all fair-play usage; and, of course, if any breakage takes place, it finds its way back to me. The average breakage on work heated in plaster, in my practice, has been one in 35, for a term of five years; while the average in this mode of proceeding, has been only one to 115, for the time I have been working on it,—a period little short of five years.

To prevent brakage in old pieces that have been long worn, when requiring a mend, I take them as they came from the mouth, and cover them up in a cup of sand, put it into a common fire, and let it stand for two hours. The cup should be made of sheet iron, about the size of a common tin cup; the sand should be heated to redness, and let cool before used. Let the work lay about three-fourths of an inch under the surface of the sand; don't let the heat rise above a low red;

when taken from the fire, let it stand till cool. It is very rare that a tooth ever cracks, in passing through this process. Mend the work, and coat with the whiting and brick-dust mixed with alcohol, and solder in the usual way; they endure a heat equally well with new teeth.

I do not know whether these methods of treating porcelain are new or not; but it is certain I have not borrowed the idea from any theory, nor received a hint from any man, of a similar character. If they may be of any use to the profession, or any member of it, he is welcome to use them.

SPLITTING OF THE ALVEOLAR PROCESS OF THE LOWER JAW.

PEEKSKILL, N. Y., Nov. 1, 1858.

MESSRS. EDITORS:—I send you the following communication, which I received from G. J. Fisher, M. D., of Sing Sing, New York, eminent as a surgeon in this part of the country, which you are at liberty to publish, if you think it of sufficient interest to the dental profession, to be intitled to a place in your valuable journal. Respectfully, yours,

E. D. FULLER, D. D. S.

SING SING, N. Y., October 28, 1858.

MY DEAR FRIEND:—I send you an account of a case which is so near the boundary line which separates dental from general surgery, that you may be interested with it, and even consider it worthy of insertion in some one of the journals devoted to your speciality. You are at liberty to use it as your own.

Miss V., of Tarrytown, New York, a tall and comely lass, while engaged in juvenile sports with several children in the dining room, was tripped by her dress, causing her to fall, with great violence, striking the front teeth of the lower jaw against the margin of a mahogony table. On arising, she found the teeth driven into the mouth, and the jaw broken.

She applied to a physician, who directed her to a dentist for treatment. She came to Sing Sing the following day (Oct. 20th), and applied to Dentist Greenleaf, who, after examining the case, came to the conclusion that it was a little more surgical than dental, and therefore called me in to treat the injury.

Upon examination, I found the whole of the incisors and left cuspidati of the lower jaw had been driven into the mouth, splitting the alveolar process as low as the extremity of the fangs; the right lateral incisor had been detached and removed,—the remaining incisor teeth, and the eye tooth, were held together by the mass of alveolar process, which had been split off; the whole, teeth and bone, moved together, forward aud backward in the mouth; they were depressed one-sixth of an inch below their natural position.

A band of silver plate, two lines wide, and long enough to reach to the bicuspids on either side of the jaw, was bent in the form of the lower dental arch. This band was perforated with small holes, opposite the spaces between each tooth. A fine-drawn silver wire was used for loops to surround the necks of the bicuspids, passing through the perforations in the band, which was placed in front of the teeth, and the ends of the loops twisted tightly. The mass of alveolar, and the teeth which were attached to it, were elevated and placed in *situ naturale*, and retained by loops of silver wire passed around the neck of each tooth, and through the perforations in the band, and tightly twisted in front. When completed, the mouth presented its usual contour, and the dental arch was regular and firm.

I have since seen the case, which was progressing favorably, with every prospect of perfect union.

I am not much posted in dental lore, and may be thought childish for reporting so simple a case, and the treatment of which is so plain and simple, and so likely to be suggested at a glance. Yours, truly, G. J. Fisher, M. D.

P. S. The mahogony table was but slightly injured, although it was deeply impressed with the force of the young lady's character, as it now exhibits the distinct imprints of four of her teeth. G. J. F.

HOW TO FIX YOUR FORCEPS BEFORE EXTRACTING TEETH.

WELLSVILLE, Alleghany Co., N. Y., March 20, 1858.

MESSRS. EDITORS: In view of the fact, that in our profession, matters of apparently minor significance are quite frequently of considerable importance, I am induced to communicate to you the manner in which I fix my forceps when about to extract bicuspids and molars of either jaw. While performing the operation in question, portions of the lips will frequently work into the joints of the instrument, causing an unpleasant wound of the mouth.

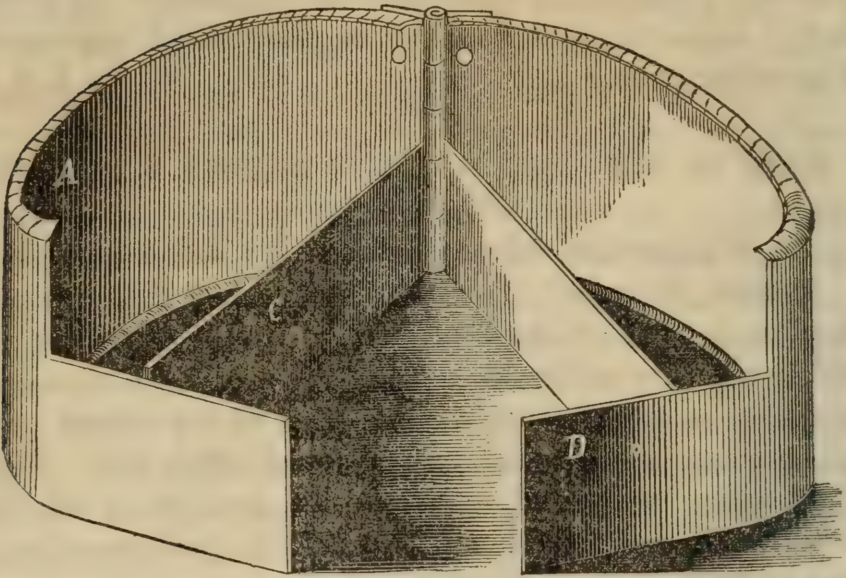
By winding the joints of the forceps with a strip of folded paper or cloth, the occurrence spoken of is effectually prevented.

I wind the joints in this way: Take a strip of cloth or paper, about eight or ten inches long, two inches wide; fold it and wrap around between the handles and beaks, and then around the outside of the joints of the instrument, and tuck the end under.

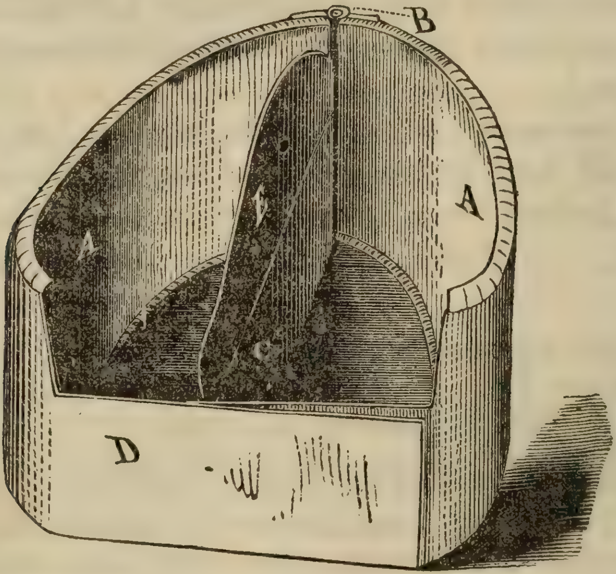
Your instrument is ready, The winding does not interfere, at all, with the free action of the instrument. Other dentists, perhaps, do this; but there is no harm in speaking about it. Truly, yours, H. M. SHEERER.

ELECTRIC ANÆSTHESIA.—Mr. G. Waite, in the London *Lancet* of October 2d, says: "A few years prior to the Great Exhibition of 1851, Mr. Laxton registered for me the right to patent the electro-galvanic current for surgical purposes, its usefulness having struck me when asked by patients to allow them to hold chains, consisting of the metallic combination of various galvanic elements, when undergoing dental operations. Subsequently, at the Great Exhibition, I exhibited battery, with the chain and wires, ready for the dentist's use."

KELLUM'S SOLDERING FLASK.



The accompanying cuts will enable any one to understand the construction, at a glance. The first one, represents the flask open. The second, closed. *A*, the main of the flask, both edges of which are cut and turned up into a right-angle about one-third of an inch. *B*, is the hinge, by which the two halves of the flask are attached together. *C*, is one of the partitions,—there being two of these, the flask is permitted to operate, by the expansion of the metal, without marring the investment. *D*, is the posterior flange,—there are two of these, and when the flask is closed, these are doubled upon one another.



The flask is a good one, and will undoubtedly be valuable, in the accomplishment of the purpose for which it is designed.

I take the liberty of sending you a soldering flask. I have christened it after myself, which I wish you would place in the Convention, for the benefit of any who may wish to get one made. I sent one to another party, who reported rather unfavorably upon it. Now, all theories must give way to facts; and it is a fact, that a plate will not change, when soldered in this flask. I have used it too long, not to know. Notwithstanding, if a theory is not rational, the fact would not follow. In the April *News Letter* of 1855, Calvert wrote an elaborate report of a series of experiments, made by him, clearly showing, that the plates were changed by the investment, preventing the natural expansion and contraction, under the heat of soldering; his system of expanding the investments with the plate, is, no doubt, a correct one, to prevent its changing; but, to follow it, one must have a furnace, to heat up the entire mass to soldering point,—a matter that persons like me, who travel, do not find convenient. Another thing, there is such an excess of sand,—seven of sand, to one part of plaster,—that you must change your muffles, before you can solder the case, for the reason of its being so tender, you can not back your teeth in it. However, it is an excellent plan, unless there is a better, which I believe this is, as the plate is not confined in any direction in it. J. D. White says, "I presume the expansion to be only across the palatine arch, and that near or at the posterior edge of the plate." Now, I do not presume any such thing. I do presume, however, that that is the only direction the plate is confined in any muffle; it certainly is not along the palatine arch, for there it can always expand backward. Now, aside from theorizing on the subject, all I asked of him, was, to try the thing, and if he could produce any change in the plate, while in the flask, why then I would give it up. But, I judge from his notice of it, that he intends to drop it, because it does not agree with his idea of adaptation to the purpose designed. My experience of the thing, I thought, should have commanded, at least, a trial, before condemning it. If you will put the plate under heat from a blow-pipe, and then turn the case over, you will see how much the plate expands, from the distance the flask will open. It has done me so much good, that I want others to be benefited by it also, as it has saved me many an hour of weary labor. To those who have any better way of doing this, I have nothing to say; but, to those who choose to use one, I pledge my experience of over a year, that they will never have a plate change in soldering,—unless a great amount of solder is used, over the surface. A thin piece of pasteboard is cut, with its edge to fit the palatine portion of the plate, and put between the lips of the flask, in order to divide the investment, and allow it to open under the expansion of the plate.

Nevada, Cal. WM. C. KELLUM.

Selections.

HOW DOES CHLOROFORM CAUSE DEATH?

BY T. L. MADDIN, M. D., NASHVILLE.

READ BEFORE THE TENNESSEE STATE MEDICAL SOCIETY, APRIL, 1858.

[From the Transactions of the meeting of the TENNESSEE STATE MEDICAL SOCIETY, held in this city last April, we extract the following paper: it has appeared in print before, but believing it, as we do, the most profound and ingenious discussion of the phenomenon of death by Chloroform which has yet appeared, we make no apologies for including it in the present number.]

This is an inquiry which has not as yet been properly and satisfactorily analyzed. From the common occurrence of fatal results from its use, a clear and accurate knowledge of the manner by which this is brought about is of great importance to the medical practitioner, in order that he may be able to apply to the best advantages those remedies calculated to rescue his patient from imminent death. My object in this paper is briefly to institute an inquiry as to what links in the chain of life have been broken, and the best means of restoring them to their physiological integrity.

It is proper that I should state here that about one hundred fatal cases from the use of chloroform have been reported. When we take into consideration the vast number of patients to whom it is administered, this mortality is relatively very small; for the universal rule is to administer it in all surgical cases of any magnitude, and it is often sportively used in operations of trivial importance. And not only so, but it is the habit of many obstetricians to administer it in their midwifery practice. Dr. Simpson, of Edinburg, uses it in every case of parturition to which he is called, and says that such is the practice of all the obstetricians of that city. In England and France it is not an uncommon practice. In the United States we find many physicians advocating its use as zealously as Dr. Simpson; among these we may class Prof. Miller, of the University of Louisville, who in a recent work on obstetrics has devoted an entire chapter to anæsthetics, and particularly chloroform.

I will state here, and I wish the fact to be specially noted, for it has an important significance in reference to the theory we will submit in this paper, that the great majority of deaths from chloroform have occurred in cases of *minor surgery*, and that not a single well authenticated fatal result has occurred in obstetrical practice. This appears rather astonishing at first view, but the result is so definite that we are forced to find its explanation in something else than mere accident, or even the philosophy of probabilities. An effect which never varies after thousands of experiments, must rest upon a cause of mathematical accuracy. Yet I do not wish to be understood to say that death can not result from the use of chloroform in parturition. The exact purport of my meaning will be better appreciated in the further development of the subject. It is proper also to state in this connection that when death has resulted in surgical cases, it is most commonly either prior or subsequent to the operation. The facts which I wish you to keep in mind, and which will find solution in the demonstration which we propose to give, are, 1st. That death has occurred from chloroform most frequently in cases of minor surgery. 2d. That it rarely occurs during the progress of an operation—occurring either before or after it. 3d. The immunity of obstetrical cases.

The manner of administering chloroform for its anæsthetic effect is by inhalation. It is received into the lungs during inspiration, and is, by the law of the diffusion of gases, mixed with the oxygen, nitrogen, and carbonic acid of the lungs. Now taking an individual, the ærial capacity of whose lungs is about a medium, in each act of respiration there are pumped in and out of the lungs about thirty to thirty-five cubic inches of air, and after an ordinary expiration there still remain in the lungs about one hundred and ten cubic inches of air, called supplemental air, but after a forcible expiration the residual quantity may still be estimated at about forty cubic inches. If we have the deepest possible inspiration to succeed this forcible expiration, a volume of about two hundred and forty cubic inches of air will be received, which added to the quantity of residual air, will give two hundred and eighty cubic inches as the ærial capacity of the lungs. It is not necessary for us to make any mention at present of the relative per cent. of oxygen, nitrogen, carbonic acid and vapor of water in the ærial mixture that is being breathed. There is no dispute in reference to the importance of oxygen to the blood, and of the elimination of carbonic acid from it, in order to preserve the integrity of physiological action, and also of the importance of a proper dilution of these active agents by nitrogen and watery vapor to the acts of expiration and inspiration. But let us apply these facts to the ordinary method of administering chloroform by inhalation. The general recommendation is to admit the free dilution of the chloroform with atmospheric air. Then suppose the respiration is quiet, and that the air breathed is about one half chloroform, after a few inspirations it is evident that one half of the supplemental air is vapor of chloroform. But it is often the case that instead of permitting the chloroform vapor to be diluted with the air, an inhaler or a napkin loaded with chloroform is placed over the nose and mouth, so as to cut off almost if not entirely the atmospheric air. Supposing still that respiration is quiet, the chloroform will soon take the place of the complemental air. When the air is thus cut off, the struggles of the patient cause forcible expiration followed by forcible inspiration; the residual air, then amounting to forty cubic inches, is immediately mixed with two hundred and forty cubic inches of chloroform vapor.

Let us upon physiological and therapeutical principles examine, in the next place, what effects will follow this condition of things. Much of this chloroform vapor by endosmose passes to the blood, and is circulated with it through different organs. What per cent. of it is requisite to saturate the blood we are unable to say. The probability is that it is not changed in its chemical condition, but circulates as a foreign body, sui generis. Its legitimate therapeutic action is to depress the encephalic centres, thus ranking it as a cerebral sedative. The portion of the cerebrum most sensitive to its impress, and which comes soonest under its influence, is the thalami optici. They being the regulators, controllers, and essential seat of sensation, when soothed into anæsthetic slumber suspend the faculty of sensation in every part of the body. It is impossible to say in what order the remaining cerebral ganglia come under its influence. But it is evident to a casual observer even, that volition, emotion, and intellection are present after sensation is suspended; remembering the fact that the corpora striata are to the motor phenomena what the thalami optici are to the sensational phenomena, and that the hemispherical ganglia, the mesocephale, and the ganglia of the base of the brain are closely linked with the corpora striata by commissures, it is readily understood how the integrity of emotional, volitional, and intellectual phenomena may remain in a measure undisturbed, and give motor expression to themselves through every part of the muscular system of animal life. If, however, the quantity of chloroform which gets access to the blood is increased, all the encephalic centres come under its anæsthetic influence, and every expression of the psychological being is suspended. We have as yet no encroachment upon the ganglia which preside over the functions of organic life, which are purely automatic, and require the integrity of the spinal ganglia, (including the medulla oblongata,) to remain in a great measure undisturbed. Many of the phenomena of animal life are simply excito-motor, the arc of action consisting in a nerve to receive and conduct a stimulus to a nervous centre or ganglia, and a nerve of motion leading from the ganglia. Most usually the excitory or sensory pole of the arc is in the integument or mucous membrane, while the motory pole is in the muscular system; the ganglia being the centre of the arc, and its integrity is essential to all the automatic phenomena both of organic and animal life. Indeed, if any link in the chain of the excito-motor arc is lost, the automatic function fails. Now if none of the organs of organic life depended upon any part of the cerebro-spinal system for their functions, then the entire system of animal life might be for a time suspended and paralyzed without involving a fatal result. But the close dependence of respiration upon the medulla oblongata links these two systems inseparably together, and if the effect of the chloroform begins to depress the spinal centres, this function is interfered with just in the same degree. If the full anæsthetic effect impresses it, then respiration necessarily ceases, for the central link in the excito-motor arc is broken. The integrity of the arc is essential to the respiratory phenomena. The medulla oblongata under the influence of chloroform, for the time involves as much the paralysis of the muscles of respiration as though this nervous centre was destroyed. Nor are they any better qualified for their work than the muscles of locomotion when the whole spinal cord is under the full sedative effect of chloroform, or is even destroyed. Now this is one of the modes by which the chloroform produces a fatal result. It will be preceded by heavy, slow, stertorous breathing. This is the only symptom in the beginning which implies that the domain of organic life is being invaded. The circulation immediately begins to fail, but this is dependent more upon the failure of the respiratory function than any direct anæsthetic effect upon the nervous centres which control the circulation. It is, however, possible to my mind that a sufficiently large quantity might be introduced into the blood to make its sedation impress synchronously upon the nervous centres of circulation and respiration.

Notwithstanding experiment, observation, and the critical examination of many reported cases of death from chloroform, sustain us in the conclusion to which we have arrived in the previous part of this paper, viz: that when the medulla oblongata is lulled into a profound anæsthetic slumber, the respiratory muscles are for the time paralyzed, the central link in the excito-motory arc is broken, and thus necessitates the suspension of the automatic respiratory phenomena; yet we do not consider this the most fertile cause of death. There is possibly a simpler and more satisfactory explanation of this subject based upon physiological and therapeutic philosophy, to which, in all the examinations I have given the question, I have not seen the least allusion. And in order that you may comprehend the exact import of the explanation which I have to offer, you will pardon me for refreshing your minds with the physiological demonstration of the respiratory problem. The first inspiratory act of the child at its birth is brought about by the sudden change in its dynamic condition ; having been imbedded in a bag of tepid water, which was sedative to its nervous system, the sensory nerves of the entire integument, suddenly brought under the stimulus of a lower temperature, and other unaccustomed stimuli, the centers of the arc thus roused up answer to the stimulation they have received, by sending a vis nervosa along the motor nerves to the muscular system, and, in common with other muscles, the diaphragm and other inspiratory muscles are contracted, which enlarges the different diameters of the thoracic cavity, and thus, by the vacuum which is being formed, invites the air to fill the bronchial tubes, and diverts the current of blood from the ductus arteriosus into the pulmonary arteries, capillaries and veins. This is a pure excito-motory phenomenon, with the sensory pole of the arc in the general integument, the motor pole in the muscular system, and the central link in the spinal cord. But this is not the ordinary respiratory nervous arc. Each after expiration and inspiration is confined to a more specific respiratory arc. The sensory pole is changed from the general integument to the mucous membrane of the bronchial tubes and air vesicles, and consists in the distribution of the pulmonary portion of the pneumogastric nerve, the phrenic and intercostal, the motor pole, and the medulla oblongata, the central ganglia. Each act of inspiration is stimulated by the complemental or residual air, which is a mixture containing four and a third per cent. of carbonic acid. The stimulus of this mixture, and possibly that of the venous capillaries, is received by the sensory extremities of the pulmonary pneumogastric. And thus it is perceived that each respiratory act is a purely automatic phenomenon, through a special excito-motory respiratory arc. The regular respiratory phenomena are modified by volition, sensation, emotion and ideation by commissural connection between the medulla oblongata and the encephalic ganglia; and on the other hand with the excito-motory phenomena of each segment of the spinal cord, thus establishing a grand *solidarite* between the different centers of the cerebro-spinal system. The society will pardon me for this apparent digression, when they reflect that in studying the manner by which an agent produces death by suspending the function of a great organ, we must ascertain what event fails in the chain of its phenomena. It must be remembered, too, that the vapor of chloroform has a local as well as a general anæsthetic effect—if applied for a few seconds to any part of the integument, all sensibility in it is lost—it ceases to appreciate stimulation of any kind, even from rude contact, and, though it was the seat of morbid sensibility, is lulled into quiet repose. The local anæthesia is one of the most valuable of the virtues of chloroform, but it is to this effect upon the mucous membrane of the air passages, bronchial tubes and air vesicles, that its great danger is due. You will call to mind what we stated in the preceeding part of this paper in reference to the residual air, complemental air, breathing air, and ærial capacity of the lungs; and how these different airs were substituted by the vapor of chloroform, and that we arrived at the conclusion that the lungs might be filled with two hundred and eighty cubic inches of pure chloroform vapor, which by endosmosis is penetrating every part of the parenchyma of the lungs. Now the obvious consequence is that we have a local anæthesia of the sensory pole of the respiratory excito-motory arc, and as a result of this an immediate suspension of the alternate contractions of those muscles in which exist the motor pole of the same arc, and whose work it is to enlarge and diminish the thoracic cavity. The consequence is just the same as though both pneumogastric nerves had suffered section at the same instant. When there is section of both the pneumogastric nerves, the number of respirations sinks to about two or three to the minute, and the animal soon dies. The power which keeps up this imperfect respiration is due to sensational, volitional, and emotional activity. If we isolate the medulla oblongata from the nervous centers which give expression to these states of being, and thus deprive the flagging respiratory functions of their aid, section of the pneumogastrics would prove immediately fatal. This is effectually accomplished by anæthesia of the thalami optici, great centers of sensation. For if they fail to recognize the inconvenience of the partially suspended respiration, volition fails to come to the rescue. Much more does this fact hold good if all the encephalic centers are under the effects of chloroform. But if artificial respiration can be kept up for a time, this local anæsthesia will pass off, and the respiratory excito-motory arc be restored to its integrity. When we come to analyze the two explanations I have given of the manner in which chloroform produces death, we find in both cases the respiratory muscles cease to act—in the one from anæsthesia of the medulla oblongata, the central link, in the other of the sensory pole of the respiratory excito-motory arc. Now my own opinion is that the latter is the fruitful source of danger and of death, and I am further sustained in this conclusion from the fact that we have no well-authenticated case of death recorded from the anæsthetic effects of chloroform when it is swallowed into the stomach, even though very large quantities have been taken. In two cases where over an ounce had been taken in each, heavy and profound stupor supervened, attended with stertorous breathing; no chloroform was found in the contents of the stomach after using the stomach-pump, which implies that it was all absorbed; it was however detected in expiration. A case is reported in the Edinburgh Monthly Journal of Medical Science for January, 1852, where the subject was intoxicated with alcohol, and took several ounces of chloroform into his stomach at once. He died in thirty hours from a gradually increasing difficulty of respiration, attributed to the combined effects of chloroform and alcohol. A post-mortem examination discovered only heavy congestion of the lungs. This is the great pathological feature in death from chloroform inhalation, as we shall soon see. Thus we perceive that very large quantities may be circulated through the blood with great impunity when it gets access to it through the stomach, which goes far to disprove the idea that the cause of death is centric, or anæsthesia of the medulla oblongata.

We remarked in a previous part of this paper, that death rarely occurred during an operation that could be attributed purely to the chloroform, and that there was no fatal case recorded when given during parturition. Now these facts furnish us with further proof of the position we have taken. During the progress of an operation, the rough stimulation of the afferent nerves not only rouses the segment of the spinal cord of which they terminate to automatic action, but all the other segments which hold commissural connection with it, including the medulla oblongata. This *solidarite* of the spinal cord, which gives rise to the first inspiratory effort of the new-born infant, now furnishes some aid to the inspiratory efforts, when the sensory pole of the respiratory excito-motory arc is impressed with anæsthesia. The *seat of the operation* for the time becomes the *sensory pole* of this arc. This is strictly in accordance with the anatomical and physiological facts advanced in previous parts of this paper. Every one who has watched the progress of a case of labor, has observed to what a great extent the respiratory acts are influenced and modified by the pains. Indeed, we see diaphragm and other respiratory muscles controlled for the time by a different stimulation to that which ordinarily governs. The *sensory pole* is here located at the *neck of the womb* and *perineum*, and, by the commissural *solidarite* of the segments of the spinal marrow and of the medulla oblongata, in common with other segments, it controls the respiratory acts, and this will be the case even though the sensory pole of the true respiratory excito-motory arc is profoundly dormant from the effects of chloroform. Now if there was centric anæsthesia of the medula oblongta, these phenomena could not follow, and death would be inevitable in every case This substitution of the sensory pole, which is one of the conservative laws of our economy, would in this case be entirely unavailable.

It only remains for me to make a few remarks in reference to the condition of the lungs as revealed by post-mortem examinations. If the patient dies from the effects of chloroform whether the anæsthesia be at the medulla oblongata or at the sensory pole, the lungs will invariably be in a state of congestion or apoplexy; precisely such a condition as results from drowning or suffocation, or section of both pneumogastric nerves—it is a complete asphyxia. That condition which is entailed by failure of the heart, on account of failure of the respiratory phenomena, from whatever cause, is a true asphyxia. Apnœa gives rise to asphyxia. The forces of the circulation which fail first, belong to the pulmonary apparatus. 1st. The suction power exerted in consequence of an enlargement of the thoracic cavity during inspiration. 2d. The pulmonary capillary force arising out of the affinity between the blood and oxygen; the oxygen having been cut off by the manner of breathing the chloroform vapor, and also by a failure of the respiratory muscles to expand the thoracic cavity. Now the heart continuing to act, with a failure of these two forces, will necessarily entail apoplexy or capillary congestion of the lungs; a failure of the capillary force of the circulation in any organ will produce stagnation and congestion in it.

The great indication of treatment in these cases is to keep up artificial respiration until the anæsthesia shall pass off. Thus the chloroform is pumped out of the pulmonary air-passages, and oxygen supplied to the blood. If this can be instituted before the heart ceases to pulsate, a favorable result is to be confidently anticipated. The capillary stagnation begins to clear up, from a restoration of the conditions which are essential to the integrity of the two forces which were lost. The means by which this desirable result is to be accomplished, are 1st. Powerful stimulation of the integument, thus to rouse up the spinal cord, and, by the *solidarite* which links them all into unity, excite the medulla oblongata to call the respiratory muscles into action. This resource should never be neglected; immunity from danger in parturition teaches us its value; still it is not always that it can be made available, particularly when the vesicular substance of the cord is at all impressed with the sedative effect of chloroform. In connection with other stimulation, cold and warm water should be alternately dashed by the bucketful upon the surface of the body. This is a powerful stimulus to rouse up the nervous centers. The second resource to keep up respiration is the "*ready method*" of Marshall Hall, which is purely a mechanical means for expanding and contracting the thoracic cavity, and is therefore always available, and fully sufficient for any emergency, if instituted before the heart entirely ceases to beat, and all the forces of the circulation have suspended their work.—*Nashville Monthly Record.*

REMARKS ON LEECHES.

BY FREDETICK STEARNS.

A CONSTANT supply of healthy and vigorous foreign varieties of these animals is considered, by practitioners in those districts where they can be afforded cheaply, to be an invaluable aid in practice. The cheapening of them in this country, where they have hitherto borne so high a price, we must consider no small benefit to the community. To the enterprise and experience of Mr. Witte, of New York, (prominent in that market for the past twenty-five years as an importer of leeches,) is due the credit for first accomplishing the above benefits, as he now offers, through his own house and those of his agents, fresh and healthy Swedish and Hungarian leeches, at prices which will bring them within the reach of all requiring their aid.

In view of an increased use of leeches in the interior, where they are now employed to a limited extent only, it has been suggested to us to state, for the benefit of our readers who may not be familiar with their use, the most practicable methods of preserving and applying them.

Leeches are sent out by dealers usually in boxes filled with marsh-sod and clay. It is best that they should be kept in this; all the care they then require is to occasionally moisten the earth, and remove the dead or sickly leeches, if there be any. The box should be kept in a moderately cool cellar. If more convenient to keep them in water, a suitable jar should be provided, in the cover of which are fine perforations, to allow of a circulation of air. Rain-water should be employed, and changed daily in summer, though less often will answer in winter, always observing to remove dead and sickly ones, in order to preserve the rest, as the diseases affecting leeches are mostly epidemic in their character.

It is necessary, in applying leeches, that the part to be leeched should be perfectly clean and free from smell of medicine or perspiration. Handle the leeches always carefully, and with clean hands. Having determined upon the number to be used, place them in a cupping-glass, wine-glass, or even in the bottom part of a chip pill-box, and invert it over the part affected. It is often desirable to partly fill the cupping-glass with water, as they will bite more readily when covered by it. When they have attached themselves, the cup can be gently removed, and the part surrounded by a soft cloth, which will absorb the moisture and blood, and catch the leeches when they drop off.

It often occurs that leeches, from some unknown cause, can not be made to bite by ordinary means. We have found that with such, the best success attends a slight scarification of the affected part, and the subsequent application of the leech, by holding it in a soft dry towel, and directing its head to the scarified part, withdrawing it a little as it reaches it, thus compelling it to fix thereat. Vinegar, milk, molasses, etc., are useless and unnecessary to incite leeches to bite.

For the application of leeches to the gums, and to the neck of the uterus, tubes are made, by means of which the leech is compelled to attach itself to any spot desired.

Pereira states that "several circumstances affect the fixing of leeches; as the condition of the animal, whether healthy or otherwise; the nature or condition of the part to which it is applied: thus, leeches will not readily attach themselves to the soles of the feet or the palm of the hands, or to the hairy parts—the presence of grease, vinegar, salt, and some other substances will prevent them from biting. Durheims says, leeches will not bite those under the influence of sulphur, on account of the evolution of sulphureted hydrogen by the skin. The effluvia or vapors of the room, as the fumes of tobacco, sulphur, vinegar, will prevent their biting, or even cause them suddenly to fall off."

If a flow of blood greater than that swallowed by the leech is desired, it must be excited, after the leech drops off, by warm fomentations or poultices.

The flow of blood from leech-bites is best checked by compression with lint, or the introduction of cone-shaped plugs of it into the wound, by means of a probe; the usual hæmostatics may also be used.

It is not recommended that leeches once used be preserved; but if they are kept for future use, they should not be stripped between the fingers nor placed upon salt, (the first kills them outright, and the second blisters them,) but they should be placed in a jar, apart from those not used, changing the water occasionally, and when they have digested the blood they are gorged with, they will generally bite readily again.

It is thought by many that the bite of a leech once used for bleeding a person suffering of an infectious disease may be the means of communicating it to others.—*Peninsular Medical Journal.*

"HOW THE TEETH ARE DESTROYED.—BANEFUL EFFECTS OE SALERATUS AND CREAM OF TARTAR."

To the Editor of The New York Tribune, Sir: The above is the title of an article which appeared in *The Daily Tribune* of June 1st, copied from *The Portsmouth* (N. H.) *Journal.*

The author, a Mr. Baker (whether doctor, dentist, or divine, does not appear), thus commences his essay: "As a subject generally interesting and important to the public, I venture to offer some views of my own and others in regard to the articles that head this communication."

This subject is indeed an important one, in any point of view, interesting every individual in every community, when considered simply with reference to the teeth; but if the views entertained by Mr. Baker, as set forth in his article, are correct, it is preëminently so, for he not only contends that these substances which are in general use in cookery are universal tooth destroyers, but that they are also equally active in undermining the gereral health, nay, that "they are both *acrid poisons.*"

But as the article in question was evidently written to show "how the teeth are destroyed," I shall confine my review to the dental branch of the subject, leaving the rest to be settled by the various interested parties along the line—from the baker to the undertaker. In reference then to the "baneful effects of saleratus and cream of tartar" upon the teeth, and to which Mr. Baker unhesitatingly ascribes their premature destruction in this country, I will say that, after having carefully read his article and examined his alleged facts, I have yet to see in them the first shadow of proof in support of his remarkable theory.

Before entering, however, upon any direct examination of this subject, as it will appear in the light of *facts* and science, I beg leave to enter my protest against the author's mode of reasoning upon any scientific subject. The first item of evidence which he offers to sustain his position is the following quotation from the "popular work" of Mrs. Stowe:

"How comes it that our married ladies dwindle, fade and grow thin—their noses incline to sharpness, and their elbows to angularity," etc., at a certain period of their lives? As a matter of merest conjecture she adds, "Have not our close-heated stove-rooms something to do with it?" "Have not the immense amount of hot biscuits, hot corn-cakes, and other compounds got up with the acrid poisons of saleratus, something to do with it?"

Now, what assistance this quotation can afford Mr. Baker in establishing his theory, of dental caries, I am at a loss to determine, and I think it will puzzle him to point out any special connection between "angular elbows," "sharp noses" and decayed teeth, unless he reverse his reasoning and make the first two consequent upon the last. But had this conjecture of Mrs Stowe's pointed directly to the teeth instead of the nose, it would still have been conjecture, and nothing else, and entitled to no more weight than any other conjecture from a lady of though great general intelligence, yet not even professing to have any knowledge of this specific topic.

Questions so purely scientific are not to be settled by the dictum or the opinion, much less by the conjecture, of persons however talented or learned in other matters, but who may be profoundly ignorant of this special department of science; and the practice, which is quite too common, of quoting the opinions of eminent persons merely because of their eminence, cannot be too strongly deprecated. The world is full and running over with senseless dogmas and prejudices which obtained their footing in this way, and which depend for the influence which they exert wholly upon their eminent origin.

The next witness introduced by Mr. Baker, speaks more directly to the point, and is no less a man than the editor of *The Boston Transcript.* He gives it as his positive *opinion* that it is cream of tartar, carbonate of soda and saleratus "which is the cause of our young men and women having decayed teeth." Will this gentleman, who is so ready with an *opinion*, inform us *how* these articles ruin teeth—whether by direct effect upon these organs, acting upon them while in the mouth, on their way to the stomach? or are they taken up by the circulating fluids, and act upon the teeth through the general system? Will he inform us why these two substances, an acid and an alkali, are always used in connection in cooking, and what is the result of this combination?

If our friend is as expert in the chemical laboratory as in the editorial chair, he will find by mixing in propor quantities cream of tartar with either carbonate of soda or saleratus, that the result will be a neutral compound, which is as inert, so far as the teeth are concerned, as so much chalk. He will find that because the component parts of a compound are acrid in their nature, it by no means follows that the compound is so, or that it partakes in the least degree of the character of either constituent. Plaster of Paris, for example, is composed of lime and sulphuric acid (oil of vitriol,) and while neither of its elements can be taken into the mouth or stomach without the most serious consequences, the compound is wholly inert and harmless. If he extend his examination to the composition and structure of the teeth themselves, he will conclude that if these articles injure the teeth at all, their "baneful effects" must be exerted directly; for finding, as he will, that the enamel is made up, for all practical purposes, solely of mineral matter, and has not the slightest circulation, he will conclude that this portion of the tooth (which is the surrounding and shield to all the rest) is neither capable of benefit nor injury through the medium of the circulation. When his examination is directed to the *bone* of the tooth, underneath the enamel, he will find the chances for reaching its substance through any vessels with which this structure is endowed not to be materially enhanced, for the circulation of the blood in the bone of a tooth is so slight as to require extraordinary circumstances to prove its existence. But even supposing it possible to communicate into the substance of the *bone* of a tooth this "baneful effect of saleratus," etc., so as to produce decay, what follows? Where would the decay be found? Evidently *on the inside* of the tooth, under the enamel. In other words, it would be an example of *internal* decay, thus involving a theory long since discarded by every intelligent dentist. If he extend his investigation still further, he will find the universal law of the system to be, that those parts which are the most vascular are the most liable to be effected through the agency of the circulation; and as the bones of the general system are a thousand times more vascular than tooth-bone, the former (upon the above theory) we would naturally expect to find, in the same ratio, more subject to disease; whereas for every case of carious bone, of the general system, we find ten thousand cases of carious teeth. In short, after he had investigated the entire subject so thoroughly as to be qualified to give an opinion which might be safely adopted by the public generally, he doubtless could and would give some better grounds for it than the only one offered by him, viz: that the French eat less saleratus than we do, and the French have better teeth; ergo, saleratus destroys our teeth. Would it not be equally good logic to say, the French drink less bad whisky than we do, and the French have sounder teeth; ergo, bad whisky is what destroys our teeth?

Mr. Baker also quotes the opinion of several doctors, to the effect that a number of students of Williamstown were made sick by eating warm biscuits and puddings "so filled with saleratus as not only to give them a yellow or burnt appearance, but also to render them bitter and nauseous to the taste." This witness further states that "after thus living for a few *months* a disease broke out, which was so severe that many believed it to be contageous." Upon this case no comment is necessary, and why it is lugged into an article whose aim is to show that saleratus destroys teeth, I shall leave the reader to conjecture. But Mr. Baker himself does not seem quite satisfied with the testimony above referred to, and hence he, as he informs us, has resorted to experiment. Now, this is doing something in the right direction—far better than to quote the opinion or conjecture of those who can not be supposed to have any special knowledge upon this difficult subject. He says, "I subjected a handful of teeth to a strong and warm solution of saleratus for about fourteen days; the consequence was they became as brittle as burnt bones." "At the same time I subjected some to a solution of cream of tartar; the consequence was not the same,but equally if not more injurious." Now, admitting the "consequences" in the above experiments to be as stated with reference to each article separately, I would ask Mr. Baker if the inference which he draws with reference to them when united, as they always are, in cooking, is correct? He has overlooked the vital fact that the two have been united; that a play of affinities has occurred during the process of raising and baking the dough that has resulted in an entire different substance from either saleratus or cream of tartar. The result, as I have already stated, is a neutral salt, perfectly harmless, so far as the teeth are concerned, and in no case would it be possible to get the separate effect of either, in cooking, unless the one or the other was used in excess—more than could be neutralized by the other. The process of raising dough by an alkali (which must always be a carbonate) and an acid is at once most simple and beautiful. The only condition necessary in the choice of an acid, when either saleratus (super-carbonate of potassa) or carbonate of soda is used, is to select one which will decompose these carbonates and unite with their base, and form with said base a a harmless salt. Sour cream, as every cook knows, is often substituted for cream of tartar. These opposite elements are so mixed with the dough that we may suppose a particle of each is resting, side by side, in every supposible point in the batch. As soon as the lump is subjected to a proper heat the decomposition and recomposition begins—each particle of acid seizing and uniting with a particle of carbonated alkali, and freeing in a gaseous form its carbonic acid, which, in its attempt to escape, forms an "air cell" in the loaf. A multiplication of these air cells thus formed gives lightness to the lump. When the bread is baked, if the saleratus and cream of tartar were used in the right proportions, there does not remain a particle of either as such. The carbonic acid of the saleratus has been expelled, and the excess of acid in the cream of tartar has united with the potassa of the saleratus and formed the neutral compound of tartrate of potassa, which is wholly inert as regards the teeth, both directly and indirectly.

Will Mr. Baker, in view of the above facts, please inform us what has become of his experiments, or rather show us their utility in reference to the articles tested, when used in cooking? He clearly having tested the wrong compound, whatever the result may have been it has no bearing whatever upon the object aimed at. The destructive effect of cream of tartar, when directly applied to the teeth, is by no means overrated by Mr. Baker. There is scarcely any acid which acts more promptly in decomposing and dissolving the enamel of a tooth, but his experiments with saleratus could not have been carefully made; certainly his record and my own, made of experiments conducted with the utmost care, do not correspond. I have yet to be convinced that salratus decomposes or dissolves the *enamel* of a tooth. Tooth-bone, which constitutes the greatest bulk of a tooth, consists (by weight) of nearly equal parts of earthy matter—phosphate and carbonate of lime—and animal matter. All alkalies have an affinity for the animal matter, but not for the earthy. The enamel, as above stated, contains hardly a trace of animal matter, and is scarcely affected by the most concentrated alkali—even caustic potash has little or no effect upon it. In the Summer of 1843, I conducted a series of experiments, assisted by Dr. Wm. Dalrymple (now of Bond street, New York), with the view to ascertain the precise effect of every substance liable to be brought in contact with the teeth, and which I have several times repeated and varied in different ways, that the result might not be deceptive, and which, instead of being confined to *two* articles, included between one and two hundred different substances. I find no such record as that made by Mr. Baker in regard to saleratus. These experiments were continued for four months, each tooth examined every forty-eight hours, and the effect upon it carefully recorded. In order to be more positive, if possible, in regard to the neutral salt, tartrate of potassa (which must not be confounded with super-tartrate of potassa, or cream of tartar, which latter has a large excess of free tartaric acid), I have, since the appearance of Mr. Baker's article in *The Tribune*, most thoroughly tested its effects upon the human teeth, and the result not only corresponds with the original record above alluded to, but fully justifies the renewal of the assertion, that this neutral salt has no effect whatever upon the teeth. Now, for the benefit of those who may have the curiosity to examine this subject, I will give a brief summary of the result of the original experiments as recorded in 1843, which is as follows:

1. Acids, both vegetable and mineral, act readily upon the bone and enamel of the teeth.

2. Alkalies do not act upon the enamel of the teeth, though the strongest of these, caustic potash, readily destroys the bone of the tooth by uniting with its animal matter.

3. Neutral salts have no effect upon the teeth, unless the acid of the salt has a stronger affinity for the lime of the tooth than for its own base; but when this is the case, the acid leaves its former base and unites with the earthy matter of the tooth, resulting in its decomposition and destruction. We have a most extraordinary example illustrating this principle in the effect of alum upon the teeth. The effect of this substance (which is a sulphate of alumina and potassa, and which contains no *free* acid) is most destructive, wholly destroying the enamel in a few days. This result can only be accounted for on the supposition that the alum is decomposed—its sulphuric acid uniting with the lime of the tooth.

4. Super salts, or those which contain a free acid, have the same effect upon the teeth as their acids would have uncombimed with a base. Cream of tartar (super-tartrate of potassa), for example, destroys the enamel of a tooth very readily, and probably with equal promptness as if the pure

tartaric acid were employed, uncombined with a base. The frequent use of this acid salt in medicine, and to form acidulated drinks, renders a knowledge of its real character in reference to the teeth of great importance.

5. Vegetable substances, not acid, have no effect upon the teeth, unless by fermentation acid is formed, in which case the (acetic) acid would of course produce the same mischief as when derived from any other source.

6. Animal substances, even while in a state of confined putrefaction, act very tardily, if at all, upon either the bone or enamel. On examining the teeth subjected to such influence, the twentieth day of the experiment, no visible phenomena were presented, except a slight deposit upon the surface, of a greenish, slimy matter, somewhat resembling the green tartar often found upon the teeth in the mouth.

To give a more definite idea of the deleterious agents to which the teeth are exposed, and the consequent liability to be affected by them, I will notice the effect produced by a few of the individual substances which are more or less liable to be brought into contact with the teeth.

Acetic and citric acids so corroded the enamel in forty-eight hours that much of it was easily removed with the finger-nail. Acetic acid, or common vinegar, is not only in common use as a condiment, but is formed in the mouth whenever substances liable to fermentation are suffered to remain about the teeth for any considerable length of time.

Citric acid, or lemon juice, though less frequently brought in contact with the teeth, acts upon them still more readily.

Mallic acid, or the acid of apples, in its concentrated state also acts promptly upon the teeth.

Muriatic, sulphuric, and nitric acids, though largely diluted, soon decompose the teeth. These are in common use as tonics.

Sulphuric and nitric ethers have a similar deleterious effect, as also spirits of niter. These are common diffusable stimulants in sickness.

Raisins so corroded the enamel in twenty-four hours that its surface presented the appearance, and was of the consistency of chalk. This remarkably destructive effect of raisins upon the teeth will be readily understood by those who are familiar with the chemical and commercial history of cream of tartar. This substance exists ready formed in the juice of the grape, and is deposited as alcohol (in which it is insoluble); is formed during the process of fermentation; so that in the casks used for this purpose, a cake of crude tartar is deposited. This purified, is the cream of tartar of commerce. When the grapes are prepared as raisins, this substance is, of course, retained, and is what gives that peculiar acid flavor to this fruit in the form of raisins, and at the same time renders raisins so destructive to the teeth.

Sugar, as such, does not in the least affect the teeth; but as it promotes the fermentation of other vegetable substances which may be about, and especially between teeth, the acetic acid which would thus be formed, would prove an active source of decay.

Teeth placed in calomel (which was made of the consistency of cream by mixing it with water) came out, at the end of four months, as bright and sound as when they were placed in it; proving, most conclusively, that the direct effect of this substance, when injuriously affecting the teeth, is confined wholly and conclusively to the parts investing these organs, and hence does not act, except indirectly, in the destruction of the teeth.

From the above facts and considerations, I think every intelligent reader will conclude that the theory sought to be established by Mr. Baker, viz: that saleratus and cream of tartar, *as used in cooking*, are the chief agents in producing the proverbial rottenness of the teeth of Americans, is without the least foundation in fact, and that, on the other hand, they have little or nothing to do in producing this lamentable result—while at the same time they do point directly to many of the agencies by which the teeth are, in fact, destroyed.

With the hope that the above facts and considerations may not only do something to correct a mischievous error, but also furnish some hints which may be beneficial to the community at large, I beg leave, through your widely circulated paper, to submit them to the public.

A. Wescott, M. D., D. D. S.

Syracuse, June, 1858.

CRIMINAL ASSAULT BY A DENTIST.

We copy from the "Montreal Herald" the following particulars relating to the trial of a well known dentist of Montreal, who has been found "guilty of an attempt to commit a rape, with a recommendation to mercy," at the Criminal Term, now being held in this city. We forbear, for the present, making any remarks on the case:—

"Dr. John Horatio Webster was placed at the bar charged with having, on Wednesday last, the 22nd September, committed a criminal assault on Louisa Chandler, wife of Mr. James Nichols, of this city.

The complainant, Mrs. Louisa Nichols, was examined by Mr. Monk, Q. C.:—I am the wife of Jas. Nichols, and reside in Fortification Lane. On Wednesday last I went to the Surgery of Dr. Webster in Notre Dame Street; I wished to have the pattern of my mouth taken. I went to the surgery about half-past ten o'clock. Before I entered the surgery I remained for a time in the waiting-room. There were two ladies in the surgery when I first entered the waiting-room. The prisoner was called in to speak to me; I then gave him some gold leaf, which he was to use in operating on my teeth. At the same time, I asked him if he could look at my mouth then; he told me to wait a little, and he would be glad to examine it. I remained accordingly, but not more than five minutes elapsed till he again came into the waiting-room, to show the two ladies down stairs. A gentleman then came in. Dr Webster then asked me to wait about half an hour longer, till he would operate upon this gentleman. I consented. After this, three ladies and a gentleman came in; they were friends of Mrs. Webster. Shortly after, the gentleman already mentioned, left the surgery. The Dr. told me to enter; in the meantime he went into the waiting-room; the prisoner followed me in a few minutes. I stood close to the dental chair, and he examined my mouth. I asked him if he though it necessary to remove a stump of an old tooth. He said he thought it would be well to take it out; the new teeth would do for life; the stump only cause irritation of the gum. I said if it were necessary to take it out it would be better to have no new teeth. He replied in the negative, and said I ought to take chloroform. He said also, that, under the use of chloroform, he could extract it in five minutes. In the operating chair Dr. Webster administered the chloroform. I did not consent immediately to inhale the chloroform. About five minutes elapsed from the time he proposed till I took the chloroform. During the interval I told him chloroform would make me sick. He replied that I had better take it; it would not influence me very long. This was all that was said. He applied the chloroform by means of a cloth. I took chloroform about four months before, and what he administered was the same substance. I did not become immediately insensible. It was about half-past ten o'clock when I went into the waiting-room; about a quarter to twelve when I entered the surgery. After taking the chloroform, the first thing I remembered was his bringing the forceps to extract the tooth. I said to him, "Have you not taken it out yet?"—he said "No;" he then administered some more chloroform. I did not perceive how he administered the chloroform, but I felt myself inhaling it. I then became unconscious. At length I became partially conscious. I saw I was not in the chair, but on the sofa; the sofa was not very far from the chair. When I become conscious I saw that the prisoner was sitting along with me on the sofa. When I first became conscious, I felt the pressure of the prisoner's body; (the witness then went on to state to the Court—an improper interrogation he had directed to her—the indications by which she was aware that the prisoner had taken criminal liberties; ultimately she said she heard a bell ringing.) I then threw my limbs off the sofa, and said to the prisoner, "I wish you would send for my husband." I again became unconscious, and felt very sick at the stomach. The next circumstance that I recollect was that the prisoner was sitting beside me on the sofa, and had his hand in an improper position, and that he had placed mine in the same. I then asked him to get a cab to take me home. He said I would be unable to proceed. He then said he had got the wax hot to take an impression of my mouth, and that that was the time to take it. I said nothing. He then carried me from the sofa to the chair, but I was still partially unconscious. He brought the wax, and took the impression of my mouth. While doing this I had not quite recovered my consciousness. When he had taken the impression of my mouth, the bell rang, or some one called, and then he left me. I sat still and vomitted considerably; at length I got upon my feet; the prisoner opened the door communicating between the waiting-room and the surgery, and allowed me to pass out. He following behind me coming down stairs. Passing through the waiting-room, I saw that there were three gentleman there ; on leaving, he told me he would have the teeth ready by Friday, if not, he would send me word. I then went home. All this occurred on Wednesday, the 22nd of this month. The second time I come to consciousness, I felt the weight of he prisoner on me. I feel confident of this fact. [Witness here proceeded to detail her reasons for this assertion. They were unfit for publication.] She went on I have no doubt at all that the prisoner was in this position; but at the same time I was not sufficiently conscious to perceive the state of my clothes. He did not extract the stump of my tooth; it is yet in my mouth. When he gave me the chloroform it was with the intention of drawing this stump. He assigned as a reason for not extracting the stump, that he had not gas enough in the chloroform. He administered the chloroform three times. I have already stated, that during the period of consciousness I was lying on the sofa, he sitting on the sofa beside me, and his hand on a certain part of my person. I have now stated all that I recollect. On arriving at my own house, I spoke to my husband. I told him that I would not again go to Dr. Webster's; because I thought he was a nasty, dirty old fellow. When I perceived the prisoner in the condition I have already mentioned, I recollect pushing him with my hand as well as I could. When I went home I perceived my under-clothes were very wet. I became aware of this circumstance before I left the prisoner's office. I thought it was my own urine, and attributed it to the fact that I had been greatly pulled about. When I first took the the chloroform I was sitting on the dental chair; when I became conscious I was on the sofa. I do not know how I was removed.

Cross-examined by Mr. Devlin.

About four months ago I took chloroform. It was administered by the prisoner. I was then getting my mouth prepared for a new set of teeth. I took no chloroform before or since until this last occurrence. The first time I took it I was accompanied by my little daughter. My stomach then grew sick; but my clothes were not wet at that time. On Wednesday last, when the prisoner brought me into the surgery, he did not lock the door communicating between it and the waiting-room. The door might have been partially open. When I was in the waiting-room, Miss Webster was there; she was neither reading a book nor playing the piano: she was talking to a friend. When I entered the dental chair, I took of my bonnet and shawl and placed them on the sofa. The prisoner told me to take them off. While I was disrobing he went to get the chloroform. At the time I went into the dental chair I heard no voices in the waiting-room. There is another door leading from the surgery into the laboratory or workshop; it was not wide open, but was partly open like the other. It was not open enough to enable me to look into the workshop. I saw no young man in the workshop when I went into the surgery; but when I was prepared to come away I did. The person I then saw was talking to a little boy; the taller of the two was standing opposite the door at the far end of the workshop; the little boy on a bench, the tall young man was standing there talking, I suppose; I don't know what he was doing. I don't recollect if I spoke to the tall young man.

Rowland Webster the young man alluded to was brought forward, and recognised by the witness. A boy was brought forward also, but she was not certain of his being the boy to whom she alluded.

Cross-examination continued: I might have heard the tall young man ask me if I were sufficiently strong to proceed home. I did not hear this young man call the prisoner from the waiting-room to me before I left; but he might have done so. Before I left, the Dr. was called into the waiting-room; I was in the dental chair at that time. I do not remember having asked the Dr. to give me chloroform. Both these doors were partly open when I sat down on the chair. I think what relieved me of the weight of his body was the ringing of the bell. At the time I was partially unconscious. I did not feel this pressure a second time; I did not feel the weight more than a second; he was then called away by the bell I think; the weight was instantaneous; I was unconscious from the time I entered the chair till I felt myself upon the sofa; at least I was partially so. I felt the prisoner's hand in an improper position upon my person, but I did not see it. I did not see my own hand in a similar position on his. The first thing I saw on opening my eyes was the prisoner adjusting his clothes. I felt but did not see him sitting on the sofa beside me. I swear that the person who sat beside me on the sofa was not the tall young man.

Mr. Devlin—By what means can you tell that?

Witness—Must I answer this question?

Mr. Devlin—Yes.

Witness—I can say without doubt it was not the young man; because I heard the Dr. speak. I heard him speak when he was addressing to me improper interrogations; but I think I said nothing except wishing that my husband were there. With a great effort I was enabled to say as much as this. I made no effort to shout to any one in the next room. [The Witness gave this answer after much hesitation.] When I said to the prisoner that I wished Mr. Nichols was there, I was lying on the sofa on my side. I did not open my eyes. I made an effort to get off the sofa, and threw my legs out; he had got off before this to answer to some one who called or rang for him. I did not then call for assistance. When the prisoner then left me, I neither saw the tall young man nor the boy. Passing out of the waiting-room, I did not tell the gentleman there that I had been abused. I spoke to no one in the house about what had happened. I made no promise to come back on Friday. I was carried back into the dental chair a second time, but I did not see the young man or boy. The sofa on which I was lying is within a few feet of the workshop door, but I never measured the distance. When I came home I told my husband that the prisoner was a dirty, nasty old fellow. This occurred on Wednesday. My husband wrote to the prisoner on the same night. On Saturday we laid the facts before Mr. Coursol. I had communicated with a lady friend of mine, Mrs. Laurie, about the abuse I received. I don't know why my husband and I did not immediately go before a court instead of waiting till Saturday. It was the Doctor, and not the young man who showed me down stairs. When I first visited Dr. Webster in April last this young man, Webster, was present watching the effect of the chloroform administered. I swear that I had no conversation on Wednesday last with the young man Rowland Webster. On the day in question the prisoner did not say that he was unwell. I was forty-one years of age last August. In the surgery of the defendant no one assisted me to dress. I reached home; I remained about the house all day. I had no friends at my house that evening. During the interval between Wednesday and Saturday my husband and I were talking about the abuse I received; we were talking of it all the time. I told some friends. When I took chloroform in April last, Dr. Webster told me that it caused me to cry and fight. I don't recollect if I were told that it produced any other peculiar effect. Last Wednesday, when talking these circumstances over with my husband, had a perfect recollection of all that occurred. I did not fully remember everything till the next day, Thursday. I sent my under-dress to a Doctor for examination; the name of the medical man is Dr. Fenwich. The articles were a chemise and a cloth; the latter I wore for a certain object. I did not take it off in the surgery, but the prisoner managed to place his hand underneath the cloth, though it was wet and soiled, but not removed from the place where I myself put it. I have not heard what is the result of the examination of the cloth. When sent to the Doctor it was not much soiled. When on the sofa, this cloth was tied on in the same position as I had placed it in the morning. I said that I believed [the prisoner had effected his purpose, though this cloth was tied on. I told this to my husband.

Mr. Devlin—Did you not swear that the cloth, when you got up off the sofa, was in the same place as when you lay down?

Witness—Of course it was; where else would it be?

Cross-examination continued—I believe he violated my person.

Mr. Devlin—How long did he take to effect his purpose?

Witness—I don't know.

Mr. Devlin—Did you not swear that the pressure was instantaneous.

Witness—Only at that time.

Court—You may go down.

James Nichols, husband of the last witness, examined by Mr. Monk, Q. C.

Witness—My wife told me Dr. Webster was a villain. She explained to me the reason of this assertion, but not till about two o'clock in the morning; she then told me he had violated her person: she told me he was aided in his design by chloroform. I saw when she came in that she was laboring under great excitement. On Friday morning having been made acquainted with the details, I laid the case before Mr. Rose.

Cross-examined by Mr. Devlin—When she came home I gave her some brandy and water to revive her; she eat a little rice-pudding afterwards.

Mr. Devlin—I now leave it to the court if it is necessary to go upon a defence. I think the Court will say there is no evidence to lay before the Jury on part of prosecution.

Mr. Monk—What has been brought out in the cross-examination is, I think sufficient.

Court—Penetration has not been proved; and the Jury can not go upon the belief of a woman while under the influence of chloroform. You will therefore, Mr. Devlin, take up the case as if it were one of attempt at assault; the question of rape must involve penetration or emission, but neither has been proved. So you need not address the Jury as if your client were indicted for capital felony; that has not been at all proved.

Mr. Tate, architect, examined by Mr. Devlin—in company with Mr. Brown I examined the rooms of Mr. Webster. It would require some amount of force to shut the door leading from the laboratory to the consulting-room; the lock was on that side of the door which was within the laboratory.

Mr. Monk objected to evidence of description.

Mr. Devlin said he wanted to prove by the plans of the apartment he then had in court that the door between these rooms was so situated that the person working in the laboratory could see from his bench what was taking place in the surgery.

(The plan of the apartments were sent up to the court.)

Court—Have you got the measurement of the rooms.

Witness—Yes. (The witness was here directed by the Court to take the plan of the apartments to the Jury, and explain their length and dimensions, etc., with the position of the doors, but not to say anything about the arrangement of the furniture.)

The witness complied.

Examination continued—If the door were partially opened, any one working in the laboratory, unless he turned his back, must see what is going on in the surgery; and hear also, as the place is so small.

By Mr. Monk—I examined the apartments yesterday. I don't think any of the furniture was removed.

Rowland Webster examined by Mr. Devlin—I am a cousin of the prisoner's and have been engaged with him learning his profession, since December last. In the month of April last, I saw the prosecutrix in the surgery; she came to have teeth extracted. On Wednesday last I saw her in the same place. I was melting gold that day; using a forge for the purpose. I saw the Dr. give her chloroform. He then made an attempt to extract the tooth. I saw her when she was taken from the chair and when she lay down on the sofa. This was after twelve. When she lay down the Dr. went into the parlor. There were some persons there; but I don't know who they were. From my place in the laboratory I could see the sofa. I had no conversation with her till she was about to go home. She asked me if I thought she were strong enough to go home. I then called the Dr. from the parlor. He told her she had better lie down again if she did not feel strong enough to go home. The Dr. went back to the parlor; she then put on her bonnet, and the Dr. came in again and told me to see her out. I swear I was the person who escorted her down stairs. From the time she came in till she left, I saw nothing occur to her. Since last December, the doorbetween the laboratory and surgery was never closed; there is no lock nor key for it. There where people in the parlor when she came in and when she went out. There was a gentleman in the chair before she occupied it. From the time she came in till she left, I swear she was not insulted by the prisoner.

By Mr. Monk--I am there every day. The door between the laboratory and surgery is always open. Mrs. Nichols came into the surgery about half-past eleven. That was the first time I saw her that day. There were some patients inside when she came. I do not know when she arrived. During the time Mrs. Nichols was in the surgery the door was about half open. I was in the laboratory all the time, for I had to keep the fire of the forge alive all day. I only left the laboratory when she prepared to go home, about half past one o'clock. I was melting gold in the forge during the time she was in the surgery. I began this labor at ten o'clock, and worked at it for about three hours; then I began to melt zinc till three o'clock the chloroform was administered about ten minutes after she entered the dental chair. She then lay down upon the sofa for the remaining hour and forty minutes. I did not see her or watch her all the time she was on the sofa. When she walked from the chair to the sofa she was under the influence of chloroform.

Court—Is it customary to give chloroform in the presence of witnesses?

Witness—Sometimes.

Court—Did you see it administered?

Witness—Yes.

Court—What is the longest time you have found females remain under the influence of chloroform?

Witness—An hour.

Court—Where are they placed?

Witness—On the sofa.

Court—How do they get there? Does the prisoner carry them?

Witness—He leads them, or they walk themselves.

Court—Does he leave a patient to remain an hour under the influence of chloroform, without looking at the state in which they are?

Witness—I don't think he does, sir.

Court—Would he see them four times in the course of an hour?

Witness—Yes.

Court—How often did he visit Mrs. Nichols during the time she was under the influence of chloroform?

Witness—He did not visit her at all.

Court—Did you ever know any other female remain an hour and a half under the influence of chloroform and know the patient to be unattended?

Witness—No.

Court—Why was it done in this instance?

Witness—I don't know.

Court—You attend upon women who take chloroform to have teeth extracted?

Witness—Sometimes.

Court—You may go down.

Mr. Jas. Goodrich examined by Mr. Devlin—I once took my wife to the prisoner, and she inhaled chloroform to undergo an operation. During the remainder of the day she was under the strongest impression that she had been taken into a room and violated, and continued to hold the conviction, though I told her I was by her side all the time and had my finger on her pulse.

Mr. Monk— She thought she was violated ?

Witness—Yes.

Mr. Monk—And whom did she accuse ?

Witness—If the truth must me told she supposed it was Dr. Webster; and it was with great trouble that I disabused her mind of the idea. She was under the influence of chloroform for about ten minutes.

Dr. W. Nelson examined—I have known the defendant for 16 years. I was about the first in Montreal to use chloroform. It produces the most contrary effects in different individuals. I once operated on a woman who had a tumor. I got the loan of an apparatus to administer ether; I received it from Dr. Webster. The patient took ether, and I removed a tumor of seven pounds weight. The woman for two days held the opinion, though many of her neighbors were witnesses of the operation, that I abused her. The witness related one or two other incidents to shew the peculiar effect of ether and chloroform. The Dr. then went on to state his high opinion of Dr. Webster ; how he had recommended him as a dentist to some of the ladies of an hospital connected with the Seminary ; and introduced him to his own patients in the city. He was thunder-struck when, on Sunday, he heard that Dr. Webster had been charged with such an offence, because he never knew or heard anything which could affect the character of that gentleman.

Dr. Jones was examined by Mr. Devlin to show the effects of chloroform. I have known ladies use language, when under the influence of chloroform, that they would blush to hear at any other time. They were most respectable ladies ; the language was awful ; where they got the language I don't know. [A laugh.]

Court—How do you account for this woman lying an hour and a half under the influence of chloroform.

Dr. Jones—To say the least of it, it was gross neglect. Medical men may leave a patient under the influence of chloroform, but then a nurse is placed beside them. A person may be as long under the influence of chloroform as this complainant, but it has not come to my knowledge.

Daniel Webster, a youth of about fourteen years of age, was examined by Mr. Devlin—I am a week in Montreal today; I came to Dr. Webster's to see my brother, Rowland. I don't know if the complainant was the woman I saw in Dr. Webster's surgery on the 22nd instant. I think it was she. About twelve o'clock she lay down on the sofa. About half past one my brother went down stairs with her. My brother and I were in the work-shop all the time she was on the sofa. The woman called him in once and he went in. Afterwards she went down stairs with him.

James Nichols, the husband of the complainant, here came into the box and produced the letter which he sent to the prisoner on hearing of the conduct of the latter towards his wife. It was as follows:—

September 22.

"DR. WEBSTER—I was much pained and surprised at the account of your vile conduct towards my wife while she was unconscious and helpless under your professional care. I have no words to express my sense of such conduct, and will await a legal exposure. In the meantime you need not proceed with the teeth, as my wife will not again place herself in your power. JAMES NICHOLS.

The following was the reply:

"I am surprised to receive such a note from you. My reputation is too well established to be affected by anything. There is not the slighest foundation for such a complaint, as my laboratory was constantly open, with no less than three persons in it all the time, and as many more waiting in the room for their turn." The remainder of the letter was occupied with reference to $14 which the prisoner owed Mr. Nichols for gold leaf, and it went on to say that the writer expected better treatment from Mr. Nichols. The letter bore no signature.

Justice Alwin then charged the Jury, explaining carefully the case in regard to the offence the prisoner had to answer, namely, attempt to commit rape, or assault. The learned Judge explained that the charge of rape had been discarded in an early part of the trial; and impressed upon the Jury, with much solicitude, that the question they had to decide was whether, taking the evidence of the prosecutrix in all its particulars—taking into consideration the position which the prisoner held and the risk to be run if, under his circumstances, he should endeavor to violate the persons of females; whether, looking at everything, he was really guilty of an attempt to commit rape or even an assault. His Honor, in conclusion, remarked on the singular conduct of the husband of the female, and observed that it was extraordinary he sat down to write a letter on the night of Wednesday, waited an answer by mail on Thursday, and took no steps till Friday to this and other facts, the learned Judge concluded by advising the Jury, if they entertained a doubt to give the benefit of it to the prisoner at the bar.

The Jury retired at six o'clock, and after an absence of about three hours and a half, brought in a verdict of "Guilty of an attempt to commit rape, with a recommendation to mercy." The decision seemed to take the Court by surprise.

Mr. Devlin Are the jury individually agreed?

One of the jury, Yes.

Mr. Devlin Then to-morrow morning I will make a motion in arrest of judgment.—*Medical Journal.*

THE LATE TRIAL OF DR. WEBSTER FOR A CRIMINAL ASSAULT.—In our last issue we laid before our readers the details, as reported for the "Montreal Herald," of Dr. John Horatio Webster, who was charged with having committed a rape on the person of Mrs. Louisa Nichols, while the said Mrs. Nichols was under the influence of chloroform. We made no remarks on the case at the time, as we were desirous to ascertain what further effort of counsel on behalf of the prisoner would result in. Dr. Webster, however, being still confined in jail, and his sentence yet unpronounced, we propose entering into an examination of the medical questions connected with the evidence brought forward by the Crown, with the view of ascertaining whether or not the verdict, "Guilty of an attempt to commit rape, with a recommendation to mercy," brought in by the Jury, was clearly warranted by that portion of the evidence. Before taking up our pen we have endeavored to lay aside all prejudiced feeling against the prisoner; for we frankly confess that if we were to allow ourselves to be influenced by our pre-conceptions of his private character, we would not be at all inclined to treat him with favor. Our aim will be to analyse the medical portion of the evidence, and give an unbiassed opinion. We can not for a moment subscribe to the decision arrived at by many who are doubtful as to the guilt of the prisoner in this particular instance, viz., that he deserves punishment for other offences, and should therefore be allowed to suffer. Were justice to be administered in this manner—were men to be condemned for alleged crime, on insufficient evidence, merely because public report, attributed to them the commission of deeds similar or dissimilar to that for which they might at the time be arraigned before the legal tribunals of their country—it would certainly result in consequences the most disastrous. No individual under such a state of affairs would be safe from the malignancy of enemies. By means of a well organized combination, the character of an innocent person, as a preliminary step, could be very effectually injured, and then a certain definite crime being laid at his door, this very reputation could be employed to secure his conviction. The English practice of regarding a man as innocent until he be *proved* guilty, is, we believe, the greatest safeguard against injustice. Better that a guilty man should escape if proof were insufficient, than admit the principle of condemning an accused without adequate proof, because he is represented or known to have committed other offences deserving of punishment.

In entering on the consideration of the evidence brought at this trial, the first question that presents itself for solution is,—What was the anæsthetic administered? That this has an important bearing will be readily admitted when the effects produced by the inhalation of the two principal anæsthetics now in use—chloroform and ether—are compared with each other. It is too much the practice among medical practitioners to regard all anæsthetic agents as possessing identical properties. It is true that through the whole series of those carbon compounds which form the true as distinguished from the false anæsthetics, there is, in their effects on the human system, a certain amount of resemblance, but each one, nevertheless, has definite peculiarities which distinguish it from all the others. They differ widely, for instance, in anæsthetic power. Light Carburetted Hydrogen, Alcohol, the compounds of Methyle, and the Naphthas, are much feebler in this respect than the Ethers and compounds of Formyle. Aldehyde and Formic Ethers are substances that act powerfully in producing insensibility, but they give rise to so much irritation that it is impossible to employ them in practice. Carbonic Acid and Carbonic Oxide are powerful narcotic poisons, Bromide of Olefiant Gas, which is pleasant and agreeable while being inhaled, producing no irritation whatever, has been followed in a few hours by death when admin- to animals. The primary effect of Ether and Chloroform when inhaled is the same—an irritant impression on the mucous membrane of the air passages, causing slight cough. This, however, soon subsides. In the case of Chloroform, when twenty to thirty minims have been administered, it is followed in a space of time, varying from ten seconds to two minutes, by symptoms of approaching unconsciousness. There is a feeling of buzzing or pulsation in the head, the brain becomes confused; the special senses are disordered; strange sounds are heard, and the color of objects altered. This is accompanied in some persons by very pleasurable sensations, and agreeable hallucinations; but in others by a feeling of suffocation, which is very distressing, and causes the patient to make strenuous efforts to free himself from the operator. Loss of consciousness succeeds, more or less complete, with quiet sleep, or sometimes unquiet sleep, with a tendency to incoherent talking and laughter. This state of insensibility remains for a period of five or six minutes, and when it passes off there exists either no recollection whatever or a very undefined notion of what has passed. When the dose has been one or more fluid drachms the effect is more powerful and rapid. Feelings of an agreeable character are soon followed by diminished sensibility, general numbness, mental obtuseness, drowsiness, complete loss of consciousness, and profound sleep. The eyelids droop; the pupils are dilated, though contractile, and roll upwards; the breathing is slow, often stertorous, and sometimes with frothing at the mouth; sensibility and the power of movement are quite lost and the muscles are in general universally relaxed, though in rare instances slight convulsive twitching of the face and limbs are observable. From the state of deep stupor or coma, the patient usually passes, for a short time, into a soft sleep, or dreamy drowsiness before fully awakening; but not unfrequently there is an immediate return to complete consciousness and the power of motion."

In the case of ether this primary effect is followed by symptoms of *general stimulation.* The pulse becomes rapid and the face flushed. The patient is exhilerated, sometimes quiet, but usually exhibiting considerable agitation of the muscular system, amounting in some, to convulsions. In a period, varying from two to ten or fifteen minutes, sleepiness is produced, and anæsthetization is known to have supervened by the closure of the eyes, the relaxation of the muscles, and the patient falling back apparently unconscious. "The mind, however, is not wholly inactive; for the individual often afterwards speaks of curious dreams or visions, which seem to him to have been of long duration, and which occasionally disagreeable or even fearful, are for the most part very much the reverse; and, altogether, the effects are so pleasing that a repetition of the process is frequently desired. But, with an increased influence of the vapor, a deep comatose sleep is induced, often attended with snoring, in which there is an entire loss of consciousness. If the agent is omitted as soon as the stupor appears, this state subsides as quickly as it was produced; and, though there may sometimes remain a momentary confusion of mind, and slight languor of body for a short time, occasionally perhaps a little headache or nausea, the subject of the process soon returns to his previous condition, as if nothing had happened. *In the period of excitement, it occasionally happens that the sexual function becomes the special seat of stimulation; and the delusions of thé patient, or his dreams, may take a corresponding direction, and, even after the perfect return of consciousness, may remain impressed on the mind with the vividness of reality.*"* In addition to its power of abolishing sensibility, relaxing spasm and inducing a state of profound unconsciousness, ether has often a remarkable effect on the mucous tissues, *causing a great relaxation with increased discharge from their surfaces. This has been particularly noticed in the mucous membrane of the generative organs of woman*, and in that of the bronchial tubes. Now by comparing the effects of ether with those of chloroform, it will be perceived that they agree on two points only: 1stly. They produce a certain amount of irritation when first inhaled; 2ndly. They both, when a certain quantity is administered, induce a state of profound coma in which the patient becomes completely unconscious, and sensibility is entirely abolished. The manner, however, in which the patient is affected as he gradually becomes placed under the influence of each anæsthetic is markedly different; and there are phenomena attending the inhalation of the one which are not observable in that of the other. Chloroform appears to be a powerful and direct sedative to the nervous system, affecting secondarily the circulation, and the respiration. Ether is primarily an excitant, and like other intoxicating agents is probably absorbed into the blood, by which means it comes into direct contact with the nervous system, the functions of which it first increases, then deranges, and finally depresses to a greater or less degree. But it is the peculiar effects which sometimes accompany the inhalation of ether that makes the question: What was the anæsthetic administered? of the highest importance in this trial. The fact that in many instances ether stimulates the sexual functions, producing erotic dreams, which the patient on becoming conscious, has great difficulty in believing to have been mere delusions and not actual realities; and that at times it produces also considerable discharges from the female generative organs, is of the highest medico-legal importance. In no work that we have had access to, are the same symptoms attributed to chloroform, and this agrees perfectly with our own experience; for in all the cases in which we have administered it ourselves, seen it administered by others, or assisted in its administration, never have we witnessed an indelicate action or gesture on the part of the patients, nor have we ever heard, during the period of inhalation or while the person was emerging from the state of anæsthetization, the utterance of obscene or improper language. Our observations of its effects, moreover, have been made on persons of different ranks of life. We have seen it administered in the large hospitals of Europe, to the lowest and most depraved persons, and in our own hospital we have operated on prostitutes while under its influence—we have seen educated gentleman and ladies, of refined manners, placed under its influence, and the results of our observations are such as we give above. The same opinion, we venture to say, is entertained by most, if not all the physicians in Canada who are accustomed to use it. We know it to be the opinion of Prof. Campbell, of this city, whose great experience of its effects, employing it, as he does, most extensively in the practice of midwifery, renders him in all probability, the greatest authority on such a question in the Province.

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* Wood's Therapentics and Pharmacology, Vol. 1, p. 688.

Two medical gentlemen were brought forward by the defense to give testimnoy to the effects of chloroform, and one of them (Dr. Jones) states: "I have known ladies use language, when under the influence of chloroform, that they would blush to hear at any other time. They were most respectable ladies; the language was awful; where they got the language, I don't know."

From what we have said, it will be seen we differ entirely from Dr. Jones, and we are confident, that if that gentleman will recall the circumstances under which he heard such language, he will find that the persons were etherized and not chloroformized. The second was Dr. W. Nelson, one of the oldest and most experienced physicians of the city. His testimony, which was intended to apply to chloroform, bears out our views. To prove that the inhalation of chloroform is capable of causing excitement of the sexual functions, and fixed delusions, he gives in illustration a case in which he administered ether. "I once operated on a woman who had a tumor. I got the loan of an apparatus *to administer ether.* I received it from Dr. Webster. *The patient took ether*, and I removed a tumor of seven pounds weight. The woman for two days held the opinion, though many of her neighbors were witnesses of the operation, that I abused her."

The second question that presents itself is:—Are there statements contained in the evidence which would indicate the particular anæsthetic employed?

During the trial it was apparently taken for granted that chloroform was administered. The defence admitted, whether or not by the direction of the prisoner we know not, that chloroform was the anæsthetic given by Dr. Webster; and endeavored to substantiate that all the prosecutrix affirmed was quite explicable by the effects of chloroform on the system.

There appears to have been an impression on the minds of all concerned that the effects of chloroform and ether are identical, and that all that was stated with regard to one applied with equal force to the other. This we consider to have been particularly unfortunate, for if it could be established that ether, or, what is a very favorite combination with American Dentists, chloroform and ether united, was the anæsthetic administered, it would go far to satisfy the minds of many medical men that Mrs. Nichols has been laboring under a delusion; a view they can not at present entertain, judging from what they believe to be the effects of chloroform.

Were it established beyond a doubt that ether was inhaled either simply or combined with chloroform it would serve, moreover, to account not only for the erotic feelings but also for the wet condition in which Mrs. Nichols found her underclothing. "When I went home," she says, "I perceived that my under-clothes were very wet. I became aware of this circumstance before I left the prisoner's office. I thought it was my own urine, and attributed it to the fact that I had been greatly pulled about." As we have stated above, ether has at times a relaxing effect on the mucous tissues, causing a profuse discharge from them, and that this effect is more manifest in the membrane lining the generative organs of females than that of any other portion of the body. This condition of her clothes has been considered by many persons as strong proofs of the guilt of the prisoner; but the explanation becomes easy on the supposition that ether was the anæsthetic. We are not aware of the same circumstance having been observed in connection with the administration of chloroform. So much then with regard to the anæsthetic. We will now proceed briefly to advert to a few points which seem to favor the view that Mrs. Nichols was laboring under a delusion, the result of the stimulating effect of the substance inhaled on the generative organs. In the first place she was in a condition which rendered her peculiarly susceptible to excitement of these organs on the suspension of the will, and, as a consequence, her dreams or delusions would take their complexion from the excited sexual function. She was, in other words, menstruating at the time of her visit to Dr. Webster's surgery.

Again, her recollection of the order in which events occurred, and the manner of their occurrence is somewhat indistinct. She states, for instance, in her evidence in chief, that when she first became partially conscious, she *saw* she was not in the chair, but on a sofa, and she also *saw* that the prisoner was sitting along with her on the sofa; that she again became unconscious, and the next thing she recollects was that the prisoner was still sitting on the sofa beside her, and that he had his hand in an improper position, and had placed hers in the same. In cross-examination, however, she says: "I *felt* the prisoner's hand in an improper position upon my person, but *I did not see* it. *I did not see* my own hand in a similar position on his. *I felt but did not see* him sitting on the sofa beside me."

From these considerations then, coupled with the evidence of a non-medical character, which may be found in our last number, we are of opinion that the prisoner has been convicted on insufficient evidence. He may certainly be guilty, but *we* could not condemn him on such slight evidence.—*M. Jour.*

CHLOROFORM.

When equal volumes of chloroform and colorless concentrated sulphuric acid (the strong commercial oil of vitriol answers very well) are shaken together in a glass stoppered vial there should be no color imparted to either liquid, or but a faint tinge of color, after twelve hours standing together. Nor should there be any heat developed in the mixture at the time of shaking it first. Any particles of dust, or cork, or other organic matter that may have been in the vial used, or in the chloroform, will, by reaction of the acid, produce a tinge of color in the acid or its separation from the chloroform, corresponding to the quantity of such particles present, and therefore in the application of the test care must be taken to avoid any such particles. Or if the acid be only faintly tinged at the end of twelve hours' contact with chloroform, it may be attributed to some collateral accidental cause. But if at the end of twelve hours, or sooner, the acid becomes yellow, or brown, or any dark color, it should be unhesitatingly rejected. If the mixture of acid and chloroform should become warm on shaking first, an admixture of alcohol would be indicated. One or two fluid drachms of chloroform spontaneously evaporated from a clean surface of glass or porcelain, or from a piece of clean unsized paper, should leave no odor after it. Commercial chloroform generally will turn the acid brown within two or three hours, and will often render it black and tarry-looking within two or three days; whilst with chemically pure chloroform there is absolutely no reaction within many days.

TREATMENT OF FRACTURES OF THE LOWER JAW.

BY W. W. ALLPORT, DENTIST.

Editors of the Chicago Medical Journal.—In the August number of your Journal, Dr. M. O. Heydock reported a case of fracture of the lower jaw, at its neck.

This was a case of peculiar interest, from the fact that it had been under treatment for two weeks, and it was found that no ordinary bandages or appliances would keep it from swaying to one side; of course a deformity would have been the result of such practice. At the expiration of this time, Dr. H. called on me, with the patient, and I constructèd for her two plates, as described in said report, and proved to be just what was required for the successful treatment of the case.

On the 19th of September, Mr. A. G. received a blow upon the right side of the lower jaw, which fractured it through the median line. The case was seen by Professor Freer, who applied the ordinary bandage, used in such cases, but found it would be impossible to secure a satisfactory result in this way, and at once placed the patient in my hands.

When the case came to me, I found the right side of the jaw depressed about eight lines below the left, and the muscles acting with so much force, that it was found difficult to bring the two sides into position, so that the lower teeth would articulate with the upper correctly, and when in position, difficult to keep them so.

With the aid of an assistant, the fracture was adjusted, and an impression taken in wax of the lower teeth, also one impression of the upper teeth, and from these, plates are swaged up, similar to those used in the case of Mrs. H. These being brought into proper position on the teeth, were removed and soldered together. Thin layers of gutta percha were then warmed in hot water, and placed inside of each plate and introduced into the mouth, as warm as the patient could bear;—the jaws were pressed firmly together, until the teeth articulated perfectly, *through the plates*, which had been filed away for the free egress of the ends of the teeth, and were held thus until the gutta percha had been thoroughly cooled by the application of cold water. This done, the patient could not open his mouth, and of course the jaw was held fimly in place, which rendered union perfect, and a natural articulation of the teeth. The plate was removed on the 18th day.

In the case reported by Dr. Heydock, it was supposed that the separation of the upper front teeth, so as to admit of a bar or wedge being passed between them, from the plate on the lower jaw, was of service; but from this case it would seem that the wedge can be dispensed with, for the gutta percha insinuates itself into all separations, and adapts itself to all the irregularities and inequalitiesof the teeth, in such a way, that the patient can not move the lower jaw, and of course it is held firmly wherever it is placed, making this appliance equally serviceable whether the front teeth are separated or not.

The fact that the lower jaw hangs loose, and its muscular attachments draw it in various directions, renders the treatment of the fracture of this one far from being the simplest in surgical practice. In fact, I think that any experienced surgeon will bear witness to the correctness of the statement, that there have been as few cases of perfectly satisfactory results, in the treatment of fracture of the lower jaw, as in almost any other class of broken bones. But if the upper jaw be made the foundation, to which the lower jaw can be immovably attached, by the application of plates constructed as above mentioned, the treatment of these fractures can be made comparatively simple and much more satisfactory.

Miscellaneous.

REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee, appointed at the last "American Dental Convention," would respectfully report the following as the order of business for the next Convention which is to meet at "Niagara Falls," on the first Tuesday in August, 1859, at 10 o'clock, A. M.:

1. Reading and correcting report of the last meeting.
2. Treasurer's report.
3. Report of committees.
4. Election of officers.
5. The retiring President's address.
6. Installation of officers.
7. Appointing committees.

DISCUSSIONS.

1. When and under what circumstances should teeth be extracted, to secure a correct development of the permanent teeth?
2. Mechanical appliances and forces, to correct irregularities of the teeth.
3. Under what circumstances and in what manner should teeth be filed to remove superficial decay, or preparatory to filling, to leave them the most secure from future decay?
4. Filling teeth.
5. Mechanical dentistry.
6. Treament of diseases of the antrum.
7. Professional intercourse.

MISCELLANEOUS.

The reading of original essays on the various topics under discussion, will be first in order under their appropriate heads.

The committee would respectfully suggest to all who expect to be present, the benefit, as well as the *propriety,* of preparing notes (to be read before the convention, of their experience and observation on the various subjects named for discussion). Let these notes be carefully prepared, short, and to the point. In this way a large amount of valuable information may be collected for publication and thus be put on record for the benefit of the profession at large.

W. W. Allport,
W. M. Wright,
W. D. Stone,
Frank Fuller,
A. M. Leslie.

MISS. V. A. OF DENTAL SURGEONS.

Subjects for discussion, at the next annual meeting of the Mississippi Valley Association of Dental Surgeons:

1. Treatment of inflamed or sensitive dentine.
2. Mechanical dentistry.
3. Treatment of dental periostitis, and alveolar abcess.
4. To what extent are atmospheric plates applicable to partial sets of teeth.
5. Anæsthetic agents, use of, in the extraction of teeth.
6. Irregularities of teeth, how corrected.
7. Filling teeth.
8. Best means to secure a good denture.

J. P. Ulrey,
H. A. Smith,
C. N. Woodward.

MISCELLANEOUS.

We have received the above list of subjects, from the business committee, for consideration at the next meeting of the Mississippi Valley Association of Dental Surgeons.

The subjects are all important, and should receive attention, by every practicing dentist. It may be said, that the most of these subjects have been discussed before; this is true; but then, all admitted that there is much yet to be learned about each of them, and every one felt regret that we know so little about them. And now, we have to keep working away at these things, till we do understand them fully; for these are the important points in dental practice.

ASSOCIATIONS.

The Mississippi Valley Association of Dental Surgeons meets according to adjournment, on Wednesday, Feb. 23d, 1859, at 10 o'clock, A. M., in the lecture room of the Ohio College of Dental Surgery,—at which time and place, we hope to see all the members of the profession, who can possibly make it convenient to attend. These meetings are always fraught with interest and profit to those who engage actively in them. We hope to see all the members of the society present, and also to have an addition of many, who, as yet, have not been identified with it.

The Ohio Dental College Association meets on the third Monday of February, 1859, at 2 o'clock, P. M., at the lecture room of the College.

It is very desirable that all the members of the Association be present. All the stockholders should feel interested enough, to be present at its annual meetings, and assist in the transaction of its business.

The new Certificates are ready for delivery to the stockholders, and those holding old Certificates will please bring them in, that they may be exchanged for the new. ☞ It is very desirable to have them all in, at the next meeting.

The Commencement exercises of the Ohio College of Dental Surgery, will take place at the College, on the evening of Wednesday, Feb. 23d, 1859, at 7½ o'clock.

☞ The 4th Annual meeting of the Michigan Dental Association will be held at the Office of Drs. Whiting & Benedict, in the City of Detroit, on Tuesday, the 11th day of January next, at 7 o'clock P. M.

As many important changes and improvements have been made in the Profession during the past year, a full attendance of the members of the Association is expected.

The advancement of Dental Science, and the general interests of the Profession being the principle objects of the Association, it is hoped that every regular practicing Dentist in the State, will also be present at the next meeting. Respectfully yours, A. T. METCALF, Sec'y.

Erata.—In Dr. Collins' article, in last number of the Register, on "securing good teeth," we are requested to make the following corrections: On page 14, 10 line from top, for "the texture" read their texture. On same page, 13th line from bottom, for "preventing" read perverting, same page 6th line from bottom, for "let there," read let these. On page 15, 15th line from bottom, for "depredations," read degredations.

Editorial.

EXTRACTING TEETH—ELECTRO-MAGNETISM.

This subject still continues to attract much attention. The main point does not yet seem to be very definitely settled, some embracing one opinion, some another in regard to it. There is but little known, really in regard to it as yet, though many are experimenting with it, and doubtless in a very little while much more will be known about it. Of the manner in which it prevents pain, in the extraction of teeth, or any surgical operation, we have heard two or three theories, rather hesitatingly suggested; nothing however, that bears with it much evidence of its correctness.

Some have supposed it to be the nervous excitement, diverting the attention from the operation. They suppose they find proof of this in the fact, that in some cases in which it seems to be successful at first, after a time it loses its effect. All who have experimented with it, have found some cases, in which it did not produce the desired results. This is sometimes the case, in the first operation, and in subsequent operations the desired result is produced. Upon examination failures will be found to depend upon one of three things. The patient may be an unfavorable one constitutionally.

1st. There are some constitutions, to which even the feeblest galvanic current is intolerable, even more so than the extraction of a tooth. We have found two or three cases, in which the passage of a slight current through a tooth, would cause the patient to scream with pain, in such we could not expect to succeed in removing a tooth without pain. In other cases we have applied it, and the patient represented it,—even a considerable current—as rather a pleasant sensation. One gentleman remarked, "put it on stronger, there is not enough to feel good," and there was a pretty strong current on at the time; then we expected a success and we *had it.* The different susceptibilities of different constitutions, to the influence of electro magnetism, is perfectly familiar to every one who has experimented with it.

2nd. The tooth may be in an unfavorable condition, one expresses the belief that periostitis is unfavorable for the exhibition of electro-magnetism.

In almost every case where there is diseased periosteum there is pain, and whether in such it mitigates it at all is a question. I have in one case removed a large molar tooth, thus affected, under the influence of galvanism without pain, and in one case removed a superior lateral incisor without pain, when there had been intense pain, from inflammation of the periostium for fifteen hours.

3rd. Intense pain may be produced in almost any case, by an awkward application. In any case the current should be tested upon the patient, before the application is made to the tooth, and no stronger current should be given, than is pleasant to the patient; that will usually be a correct criterion; the hands of the patient should be moist when making this test, otherwise it might not be a true one. Every case of failure, I have traced to one of these three causes.

It is but seldom that the constitutional idiosyncrasy above referred to is met with. The second difficulty of course may occur more or less frequently, dependent upon circumstances, beyond the control of the operator.

Another theory, one more ingenious if not more true, is founded upon the fact, that the nerves are the channels of communication between the brain or source of sensation, and other parts, and it is then assumed that electricity is the agent of communication, as upon the telegraphic wire; that the nerves are indeed so many telegraphic wires upon which the subtile agent plays, and that when a stronger current, though it be an artificial one, is thrown on to them, it counteracts the weaker, though it be the natural one, and that the circle of the stronger current, being completed outside of the brain, the weaker current is neutralized, intelligence, of even great injury, would not then be communicated to the seat of sensation. This theory may be squinting in the direction of a solution, but as it is presented now, it is liable to some objections. If this theory was literally correct, we would only have to include any part of the system in an electro-magnetic circuit, to produce insensibility to any operation. I have no theory to present upon this subject. Electricity in the various forms, in which it is presented, is not as tangible as some other things; it is one of the most, if not the most subtile material in nature. We understand but little of its *mcneuvers* upon an iron wire, and when it comes to play upon the vital parts, and upon instruments of so peculiar a character as the nerves, about which we know so little, we hope we will be pardoned for not presuming to know all about it. *Nerves, electricity* and *vitality*, all thrown together, and then to account for the modus operandi of the manifestations, is rather more than we have attained to as yet. In connection with this, I will give two or three cases, which will present about the ordinary results, according to our observations.

Case 1.—Nov. 11—Mr. J. presents the first left superior molar for extraction. He is of a nervous sanguine temperament, very irritable and fearful of pain. The tooth had been aching from an exposed nerve, and very severely. He remarked that his teeth were very hard to draw, and he wished to have the battery applied, if there was any hope or probability of relief. The battery was applied and the tooth removed, and his first remark was, "Why sir, that is perfectly astonishing, it did not give me one particle of pain." He left the office perfectly delighted with the operation. The tooth was firmly set and required a strong effort to remove it.

Case 2d.—Mrs S., delicate; aged 26, of a nervous constitution, presented three molar teeth for extraction. She desired the application of the galvanic current. The gum was separated about one, when she became very sick and faint. Cold water was dashed upon the face, and camphor applied to the nostrils as restoratives, without much effect; applied galvanism through the arms, slight at first, increasing it gently, till the current was as strong as could pleasantly be borne. She was at once completely restored, and seemed to be much stimulated by the current, and had three large teeth removed, with far less pain than she had ever experienced in a similar operation. She remarked that after this, the extraction of a tooth would have no terror for her if she could have galvanism. She felt more vigorous after the operation than before it.

Case 3rd.—Mr. McC., of bilious temperament, in good health; removed the second superior left bi-cuspid, pulp dead, no periostitis, had never ached. It was removed without any pain whatever, with battery attached. Has had other teeth extracted but they gave pain. These cases present about the ordinary results in the extraction of teeth under the influence of electro-magnetism, in none of these was there much pain. I have on record two or three cases in which there was considerable pain, but they were dependent upon circumstances to which reference is already made.

It is important in the application that the forcep should not touch the tongue or lips. The most simple method of preventing this, is with a piece of pure rubber tube three fourths of an inch in diameter and three inches long, slipped on the joint of the forceps. We know nothing better than this. We would not be without the battery and would desire all to try it.

We are frequently asked about the right to use it; in regard to this, all have about the same facilities for obtaining information, and we know no more about it than others may.

All we have to say is, do not infringe upon the well defined rights of any, but always be found upon the side of progress and improvement. T.

THE AMERICAN JOURNAL ON DENTAL CHEMISTRY.

The American Journal is again in trouble on the chemistry of caries. It says in reference to the discussions on this subject at Cincinnati, "The unfounded theories about nitric acid in the mouth played a conspicuous part;" and again, "it was said that nitric acid produced upon teeth out of the body, appearances resembling white decay."

No doubt the above was said, for the American Journal says so, but we are utterly at a loss to know who said it. It was probably said only in a whisper; for we were present at all the discussions, and listened with a good degree of interest. Indeed, about the only member of the convention that said anything on the subject was *ourself*, known as the "anonymous friend" of the Journal. And if the above quotation has any allusion to our remarks, we have only to say that we did not speak of the action of nitric acid *out of the body;* for our experiments were tried *in the mouth* as well as out of it. And we did not then, and do not now claim "that nitric acid is the sole agent in the production of the white decay;" but we did claim that nitric acid is capable of producing white decay either in or out of the mouth, and we stated then that as yet we "knew of nothing else capable of producing it." Will the American Journal have the kindness to tell us of something else capable of producing it?

The Journal tells us "there are, indeed, very good reasons for doubting the presence of free nitric acid in the mouth. The hypothesis of the conversion of ammonia into nitric acid will not answer at all. The conditions under which this change takes place do not exist in the mouth."

Well, doctors differ. It maintains on the authority of Bischoff, that "nitric acid in a free state, is formed in nature, only when an electric spark passes through oxygen and nitrogen."

Liebig tells us that the last products of the decay and putrefaction of animal bodies are *ammonia*, in the temperate and cold climates, and *nitric acid* in the tropics and hot climates, and he adds that the latter is the product of the transformation of the former. The mouth is not a *tropic*, but the Journal will agree thats its *climate* is warm.

Liebig also tells us that, "when moist azotized animal matter is exposed to the action of the air, ammonia is liberated;" and again he says "ammonia can not be exposed to the action of oxygen without the formation of an oxyd of nitrogen, and in consequence the production of nitric acid." This latter idea is variously stated by him, as for example, "nitric acid is always a product when ammonia is present in the substance exposed to oxydation."

From this it is evident that Liebig believes that the hypothesis of the conversion of ammonia into nitric acid *will answer*, notwithstanding the contrary opinion of the Journal.

In speaking of this transformation of ammonia, the Journal says, "It is no easy matter, to accomplish this result;" but Liebig says, "It is owing to the *great facility* with which ammonia is converted into nitric acid, that it is so difficult to obtain a correct determination of the quantity of nitrogen in a compound subjected to analysis, in which it is either contained in the form of ammonia, or from which ammonia is formed by an elevation of temperature."

The Journal says of this transformation that "the surrounding deoxydizing influences render it almost impossible that it could occur" in the mouth.

The *deoxydizing* powers of the mouth may sound strange to those dentists who use oxydizable metals either for plates or fillings; but then they must yield the point that these powers are quite formidable, for the Journal is not likely mistaken, though it did once tell us that none but cane sugar is used in food. But in what do these deoxydizing influences consist? Are they explained by the fact that the saliva absorbs oxygen readily from the air and *imparts it to other bodies*? that, on this principle, it oxydates gold and silver, when triturated with it? (See Piggot's Chemistry p. 172.) Now, every dental student knows that substances are oxydized more readily in the mouth than in the atmosphere; and we conclude, there fore, that the junior editor must have indited this, for the senior, being a practical dentist, would know better than to make such a statement.

It is pretty evident the Journal and we differ in regard to the chemistry of caries. We have only to say that on our part, and we presume on theirs too, there is an honest difference. And though we have not referred to many authorities in these remarks, it is not that they are scarce, but that brevity is desirable. The positions of Liebig above noticed are sustained by chemists generally—not by all we are well aware. And if these positions are true, we contend that we have given the most rational account of "white decay" on record. Every dentist knows that decay is usually a gradual process; and every chemist knows that the constant formation of nitric acid for a length of time, in quantities too small to be recognized by chemical tests, would be sufficient to produce the disorganization of the tooth. And if the same state of circumstances on a large scale invariably produces nitric acid, we have a right to infer that these circumstances, on a reduced scale, will produce the same results, correspondingly reduced.

In conclusion we do hope the Journal will tell us what does produce dental decay in its various forms, or at least attempt to give us some rational account of the matter. One of the editors has told us that "the different acids generated during the putrefaction or fermentation of vegetable or animal food are fully capable of disorganizing the teeth." Is this true of carbonic acid? one of the acids generated. (See Piggot's Chemistry, p. 157.) Now we submit that it is time we had something of an affirmative nature from the Journal. It has been negative long enough. It is easy for it to deny the soundness of our positions. Will it give us its own? W.

THE AMERICAN JOURNAL AND THE AMERICAN DENTAL CONVENTION.

In regard to the late meeting of the American Dental Convention, the *American Journal* says: "For the summary of the proceedings of the Dental Convention, held at Cincinnati in August last, we are indebted to a professional friend who was present on the occasion;" and further it says, "Not having a copy of the papers read on the occasion, we are unable to publish any of them in the present number of the Journal. We may copy some of them from other Journals in our next issue."

We are sorry the papers were not received by the Journal; and that our readers may know that the fault is not ours—that we have not acted selfishly in the matter—we would state that, in accordance with a previous agreement, we sent advance sheets of all the papers read at the Cincinnati meeting, the *official* minutes, and *our own* report of the discussions. These were forwarded to the American Journal more than two months' before its arrival in Cincinnati; and the Register was forwarded about a week later.

But there is something funny in the history and character of the Journal's report of the proceedings of the late meeting. Now, that "professional friend," to whom it is indebted for its "summary of the proceedings" took but few, if any notes, as all who were at the Convention could testify if we would **Frank**-ly tell them who he is, (and we could tell.) What a fine memory he has! especially for the long speeches. And it is pretty good even on the short ones, except that it has led him in most instances to transpose the ideas. The reader will cease to be surprised that the "professional friend's" report is only a reproduction of ours, sadly mutilated, when we tell him that that same "professional friend" wrote to us soon after his return home, for advance sheets of the proceedings, and that they were promptly forwarded to him. He was undoubtedly pleased with our report of his own remarks as they are almost invariably transferred *erbatim et literatim.*

We will only add that the Journal might have had *our report* more accurate by obtaining it more directly. It would have been heartily welcome to it;—it is welcome to it even in the mutilated form in which it has reproduced it. But what are we to expect from a Journal which, after unjustly charging us with making an anonymous attack on its senior editor, has not the *manliness* to retract, after its mistake is pointed out to it? W.

ETHER QUESTION.

Dr. W. Y. G. Morton has recently entered suit against Dr. Davis of the U. S. Marine Hospital at Chelsea, for infringing his patent for the use of Ether, as an anasthetic, damages laid $5,000. We supposed that this claim had been long ago abandoned. There are several circumstances that led us to this conclusion. Two men, (Drs. Morton and Jackson,) jointly swore out a patent as discoverers of it, neither of them having any just claim as discoverers of the anæsthetic properties of ether, for it seems Dr. Wills discovered it two years before the patentees. Again application was made to Congress by one of the patentees for remuneration, which he need not have done had he not virtually abandoned the patent as untenable: fearful that he might be unsuccessful in this, the aid and sympathy of friends in New York were sought, to procure him a subscription of ten thousand dollars, as a slight acknowledgment, of the "inestimable boon," conferred by him on mankind. It is affirmed that he personally made application to a member of the medical profession, for permission to enter an amicable suit against him, that he might with more hope of success prosecute his designs in regard to this matter, both in Congress and elsewhere.

From all these we could not avoid the conclusion that the patent was abandoned, but failing in every other effort to obtain emolument, this suit is instituted as a last resort; in this, as in his other efforts, we doubt not he will fail, as justly he should. But in the mean time he may harass and annoy a party that never did any injustice to Dr. Morton. But Dr. Davis will have the sympathy and aid too, if he needs it, of every right minded member of the medical profession. T.

THE DENTAL REPORTER is still *reporting progress.* Toland is still alive and is likely to *report* himself quarterly. The Reporter gives a true index of the state of dental manufactures, as its proprietor is always up with the times in this department. The Reporter is publshed at 25 cents per annum. Those who can not afford to subscribe, should take the LAMP, or wait for the issue of some cheap journal. W.

The Cincinnati Dental Lamp, edited and published quarterly, by J. M. Brown, of the Cincinnati Dental depot. Price, 20 cents a year in advance, THE LAMP is neatly executed and contains, including advertisements, thirty-six pages. Its original department is mainly indebted to the industry and talents of the editor. His remarks are varied and spicy, characteristic of Dr. J. M. Brown. Its subscription price is within the reach of all. Who starts the next one? W.

The Cant Hook.—A Quarterly Journal, devoted to the extraction of teeth, the rolling of logs, and *the advancement of the Proprietor's business.* Published by E. SAW-MILLER, Editor and Proprietor. "Not received *in exchange.*"

This Journal contains two pages (or rather is contained between two,) neatly executed and well filled with original and selected matter. A writer of mature age and great experience is engaged to contribute to its original department, and should his energies fail, hosts of younger authors are ready to take his place. The "*Cant Hook*" is published at the exceedingly low price of TEN CENTS per annum, "*invariably in advance,*' unless the subscriber should prefer to receive it as the proprietor's advertising medium, and pay the postage on it wholly for "the advancement of our glorious profession."

Prospectus—The Cent-er Drill.—The Cent-er Drill will be a sizable Journal, issued semi-occasionally or oftener, and as its name imports, will be *blunt* at one end and *sharp* at the other. It will be used in boring holes through the incrustations which incase professional fogyisms, that "a light to dispel the darkness" may be enabled to illuminate their interiors. Nothing will be admitted to our pages unless it is sharp pointed, or at least *good on a bore.*

TERMS.—To be within the reach of all, and *to defy competition*, the DRILL will be issued at the low price of ONE CENT per annum, and will be cheerfully loaned to "decided bores," and all other *hole*-souled fellows.

Address, X. K. VATOR, Proprietor.

The Quarterly Journal of Dental Science for October,—Published by Walton & Maberly, London, is at hand, with more than it usual interesting and instructive variety. On one of our advertising pages, will be found a synopsis of its contents, which, however, does not give much of an idea of the real character of the articles which it contains. The profession in England, just at this time, occupies rather an interesting attitude, and one which will have much influence upon the profession in the United States, as well as in England. Every intelligent dentist will feel that he should keep posted in regard to these things. This can only be done by taking one of the English Journals. Their proceedings are too voluminous for transfer to our pages. Every dentist will find the Quarterly Journal a valuable acquisition to his periodical literature. It can be had of Lindsay & Blackiston, Philadelphia.

☞ The following persons have consented to act as agents for the Dental Register. They will distribute the numbers to the subscribers in their respective places; receive subscriptions and receipt for the same, also take new subscriptions and transact any business pertaining to it.

E. A. L. Roberts, 55 Bond Street, New York,
Bingham, care of Jones, White & McCurdy, Chicago, Ill.,
Wm. T. Copeland, care of Fisk & Hall, Cleveland, O.,
Dr. A. M. Leslie, St. Louis, Mo.,
Dr. D. D. Smith, Syracuse, N. Y.,
Dr. A. Blakesley, Utica, N. Y.,
Dr. J. M. Brown, Cincinnati, O.,
J. T. Toland, Cincinnati, O.,
S. F. Dawes, Louisville, Ky.

We call attention to the following notices and would urge all invited to attend.

INDIANAPOLIS, October, 1858.

Dear Sir:—We, the undersigned, practicing Dentists of the City of Indianapolis, on consultation at a preliminary meeting held at the office of Dr. Jno. F. Johnston, have determined to call a meeting of the Profession, at Indianapolis, on Tuesday, December 28, 1858, for the purpose of forming a State Dental Association. We have done this, believing that we would be placed on more friendly and pleasant terms with each other; and that, by the discussion of such subjects, giving our experience in the treatment of unusual cases, the presentation for examination of peculiar casts, instruments, &c., &c., that it would be mutually advantageous; and, also, because we have been urged to do so by several of the profession from other portions of the State, whose names you find below, whom we had the pleasure of meeting at the American Convention. We, therefore, earnestly request you to co-operate with us, and bring whatever models, casts, reports of cases, &c., &c., that you may have, that will be of interest to the meeting. A number of prominent members of the Profession, from other States, have promised to be with us; and believing that nearly all in our own State will be here, we anticipate a pleasant and instructive holiday meeting. We feel we must not be behind our neighbors in this respect; we therefore trust you will come. Should you know of any of your professional acquaintances not receiving this Circular, will you do us the favor to invite them.

G. C. NORTH, Indianapolis,
T. M. NICHOLS, "
JOHN MOFFITT, "
O. H. KENDRICK, "
JNO. F. JOHNSON, "

J. P. ULREY, Rising Sun,
W. R. WEBSTER, Richmond.
Dr. LUPTON, Shelbyville.
Dr. GOODE, Madison,
Dr. MARTIN, Franklin,

Contributors to the Register, Vol. 12—The following gentlemen have very kindly volunteered as contributors for the Register:

Dr. James Taylor; Dr. H. R. Smith; Dr. W. B. Roberts; Dr. A. Berry; Dr. C. B. Chapman; Dr. Jos. Richardson; Dr. Wm. C. Kallum; Dr. D. Pratt; Dr. W. W. Allport; Dr. E. Collins; Dr. I. B. Branch; Dr. C. C. Dills; Dr. W. H. Shadoan; Dr. C. Bonsall; Dr. H. A. Smith; Dr. George Watt; Dr. J. Taft; Dr. S. F. Compton; Dr. Wise; Dr. Fisher; Dr. J. Murray; Dr. J. McCalla.

HARRIS—NEW EDITION.

The Principles and Practice of Dental Surgery, By Chapin A. Harris, M. D., D. D. S., Seventh Edition, Enlarged and Improved, has just come to hand, from the popular publishing house of Lindsay & Blackiston, Philadelphia. This work we find really enlarged, containing 892 pages, and has been improved, we may say, much improved. We do not intend to say that the former edition was imperfect,—it was all that could be expected at that time. The improvements which we notice in this edition, are based upon the improvements and progress made in dental practice, since the issue of the last edition. These seem to have been very fully and appropriately incorporated into the work.

We think that the work is now quite large enough, for a text work of this kind; and when it is issued again, we hope it will be at least in two volumes. No dentist, who wishes to have the standard authorities upon dental practice, can afford to be without the latest edition of this work. It should have a place in the library of every physician.

The work is for sale by Rickey, Mallory & Webb, No. 143 Main Street. Price, $4. Also all the standard dental and medical works will be found upon their shelves.

COMPLIMENTARY SUBSCRIBERS.

Reader, did you ever hear of them? We know you never did. They may have been in existence a long time, but they were not known to science till we lately discovered them, while engaged in earnest research for something far more profitable.

We discovered one of them in this way, and all are discovered by nearly the same process.

A dentist, in the full tide of successful practice, had received the *Dental Register*, regularly, for years; and when his bill was presented, he stated that he thought the *Register* had been sent to him merely for the sake of having prominent dentists on the subscription list. He never supposed he was expected to pay for it,—supposed it was desirable to have his influence, etc.

Now, this man took the *Register* on the published terms, and his bill was more than once forwarded to him; yet he attempted to *defraud* the publisher, in the way we have described. As we can't think of any term stronger than *unmitigated meanness*, we will not attempt to christen his conduct. On behalf of the publisher, we can say, that if any one should receive the *Register* as a compliment, it will not be the dentist in full practice, and, therefore, well able to pay for it,—but the worthy *beginner* who is struggling with the *truths and trials* of his profession. The only way a man can be an honor to a subscription list, is to *pay in advance*.

W.

Dr. Elisha Townsend, of Philadelphia.—The death of this worthy gentleman will give pain to a large circle of friends; and by his death science has lost a most intelligent servant. He was President of the Dental College, Philadelphia, and has been instrumental in doing much to advance the true interests of the profession throughout the country. As a man, he possessed noble qualities; and as a friend, he was prompt, unselfish and sincere. He had recently visited Europe for his health, but returned only to die. He will long be remembered by those who knew him, and the absence of his aid and counsel will make a void not easily filled. *Boston*, Oct. 18th, 1858. E. G. T.

At a meeting of the Faculty of the Pennsylvania College of Dental Surgery, held October 19th, 1858, the following resolutions, presented by Dr. McQuillen, were unanimously adopted:

Resolved, That we have heard, with profound emotion, of the decease of our late eminent and distinguished colleague, Prof. Elisha Townsend, whose uniform courtesy and affability endeared him to us as an associate, whilst his abilities as a practitioner and teacher, commanded our unqualified respect.

Resolved, That, throughout a long career, during which he enjoyed a most enviable position in the estimation of the profession and the community, and cherished a constant and deep interest in the advancement of the former, he contributed largely by the soundness of his judgment, the high order of his practice, and the elevated tone of his sentiments, in raising its standard to the position occupied at present.

Resolved, That the active and prominent part he maintained, and the sacrifices he made for years, to advance the interests of the Dental profession, justly entitle his memory to the grateful consideration of every practitioner.

Resolved, That we render to his widow, in her bereavement, our deep, heartfelt sympathies.

Resolved, That a copy of these resolutions be communicated to the widow, and the Dental Magazines be furnished with a copy for publication. T. L. Buckingham, Dean.

By the above, it will be seen that the dental profession has lost one of its brightest ornaments,—one who has ever been foremost in every good work, for the elevation of the profession to which he was so ardently attached. He stood high above any thing like professional jealousy; he was always desirous to take by the hand any professional brother, and lift him up, if need be, to as nearly his own level as possible. His motto was "*level up*," not level down, and he always acted upon this principle. He has filled many places of trust and honor in his profession, and always with the most brilliant success. His integrity, both as a man and as a member of his profession, was of the highest order. If, in any instance, he found himself in a wrong position, he with true magnanimity abandoned it, and warned others of the danger; in no case have we seen him maintain a false position, simply because he was in it.

His loss will be sensibly felt wherever he is known, but especially in the dental profession throughout the world.

THE
DENTAL REGISTER OF THE WEST.

VOL. XII.—MARCH, 1859.—NO. 3.

Original Essays and Communications.

MANAGEMENT OF GOLD ALLOYS.

BY GEO. WATT.

We have been frequently solicited, by some of our young professional friends, to insert in the "*Register*," a few practical remarks on the treatment of gold scraps, and filings, in the Dental laboratory. In complying with this request we will endeavor to be understood, without attempting to be *scientific* or minute. Various processes and manipulations may be resorted to successfully, and almost every dentist has his favorites, hence, many may think our suggestions are not the best that might be given, and this opinion is very likely to prove correct.

The appropriate metals for reducing gold to the standard required for dental purposes, as all know, are silver, copper, and platinum. It is sometimes desirable to raise the standard of gold alloyed with these, or to remove them entirely from the mass. But the principle trouble with scraps and filings arises from the presence of what are called base metals. Of these, iron, tin, lead, and zinc are those most frequently met with. Any of these, in appreciable quantity, renders the gold brittle, and unfit for use, yet they differ somewhat in their influence on it. Tin causes less change of color than the others, but it forms a more brittle alloy with gold than any of them. The alloy of gold and lead is darker colored than that formed with tin, and is nearly as brittle. Zinc seems to have less affinity for gold than either tin or lead, and, hence, it appears to be unequally distributed through the alloy, and the consequence is that some parts of the ingot is far more brittle than others. If the attempt to roll it into plate be made while it is in this condition, some parts of it may manifest a good degree of plasticity, or malleability, while small spots will crack, causing the plate to be full of holes. The presence of platinum imparts to the alloy an exceedingly dull color, and it increases its hardness and elasticity, but does not render it brittle. To sum up these points;—when the alloy is very brittle, while the color is rather bright, we may infer that tin is present; if the color be very dull, while the alloy is tough and elastic, platinum may be suspected; if the mass be both brittle and dull colored, lead is probably present, and if the brittleness be confined to limited spots, the presence of zinc is indicated.

In all our remarks thus far, we have taken it for granted that the base metals are present in only minute proportions, that gold greatly predominates over them. We are endeavoring to describe such alloys as the mechanical dentist is liable to meet with after taking what he supposes to be due care to prevent their formation. He will often find alloys not possessing any of the specific characters described above, for he may have several base metals combined with his gold at the same time.

Before noticing the method of separating gold and platinum, and the mode of obtaining pure gold, we will speak of the "dry process" for separating minute particles of base metals from dentists' gold. The scraps are supposed to be under treatment, and are known to be 18 or 20 carats fine, but in handling a trace of one or more of base metals is melted with them, and the gold is rendered unfit for use.

Now, if when the alloy is in a liquid state, some element be brought in contact with it which, by virtue of its affinity for the base metal, is capable of separating it from the gold, our end is accomplished. Whatever element be used, it must, of course, have a stronger affinity for the base metal than for the gold. And, fortunately, we are at no loss here, for gold has but little affinity for any of the non-metallic elements.

The only elements relied on, in the process under consideration, are oxygen, chlorine, and sulphur. The base metal is to be separated by converting it into an oxyde, a chloride, or a sulphuret. Without being considered responsible for the etymology used, we will speak of the three processes under the titles of *oxydation*, *chlorination* and *sulphuration.*

If we attempt to purify our gold, then, by oxydation, we want some compound containing oxygen, which is decomposed by heat. A variety of substances might be used, but nitrate of potash will usually accomplish all that can be obtained by this process. This salt is readily decomposed by heat, and the decomposition results in the liberation of oxygen. This may be more clearly understood by a glance at the formula representing its composition;—$KO.\ NO_5$ For sake of the non-chemical reader, I may be allowed to remark that K. is the symbol of potassium, O. that of oxygen, and N. that of nitrogen. (Potassium being formerly called *Kalium*, explains the retention of the symbol K.) Potassium and oxygen uniting form potash; and nitric acid, NO_5, uniting with this, forms nitrate of potash, which is the *nitre* or *salt petre* of commerce. Of the three elements composing this salt, oxygen is the only one that can act on the base metal, for nitrogen has but little affinity for any thing, and potassium has none for this class of metals. But oxygen is abundantly liberated as the nitrate is converted into a hypo-nitrite, thus:—

$$KO.\ NO_5 = KO.\ NO_3 + O_2.$$

Concluding, then, that this salt can do nothing but oxydate, we can readily understand how and when to use it.

When our brittle alloy is melted, a small quantity of the nitrate should be dropped into the crucible, without taking it from the fire; and, if thought necessary, additional quantities may be used till purification is effected. The roasting should be continued for some time, and it is often necessary to pour, and resume the process in a clean crucible, as the slag sometimes prevents the free access of the oxygen to the alloy. By a little practice the manipulator will learn the various minutiæ of the process.

The process of oxydation of course is not adapted to the separation of a metal from gold, which has but little affinity for oxygen. We mention this only because we have known dentists to roast their alloys with salt petre, for hours in succession, in an endeavor to separate platinum from gold. As neither metal is oxydated under such circumstances, the effort is simply a waste of time and fuel.

The process of oxydation, then, is to be resorted to when the base metal is readily oxydized. But if it have but little affinity for oxygen, then we should inquire into its affinities for chlorine and sulphur. Thus, if it be tin, for example, we could remove it better by chlorination than by oxydation.

Chlorination should always be resorted to when the base metal has a stronger affinity for chlorine than for oxygen or sulphur. Any compound which yields chlorine by the application of heat, and at the same time introduces no troublesome material into the alloy will answer the purpose. Some chlorides are not readily decomposed. For example, common salt, which is chloride of sodium, sustains a high heat without decomposition, and, consequently will not answer our purpose. The compound which we prefer, is the chloride of mercury, commonly called corrosive sublimate. It has several advantages over most other chlorides. It yields chlorine readily by the application of heat; and, at the same time, the mercury, instead of uniting with the gold, is driven off in the form of vapor. It may be used as directed for nitrate of potash, in the process of oxydation; but smaller quantities should be added at once, to prevent waste; and, indeed, smaller quantities will answer the purpose.

The well-known "sal ammoniac" is used for the same purpose, and in about the same way. This salt is the hydrochlorate of ammonia; (or, possibly, chloride of ammonium), and it yields chlorine by decomposition with heat.

Of course it is not practicable to separate, by this process, two metals which differ but little in their affinity for chlorine. Those who try to separate gold and platinum in this way, will, accordingly, fail. We have known some to roast, first with saltpetre, and then with corrosive sublimate, and then become disheartened, because their plate, though sufficiently tough, was still of a bad color. More than once, such gold has been sent to us to be refined, accompanied with a long, graphic history of the tortures it had endured, and the obstinacy with which it resisted refinement by roasting.

To remove the base metals, sulphur is sometimes dropped into the crucible after the alloy is melted, the manipulations being about the same as in oxydation with nitrate of potash. But, as all elements act with greater energy in their nascent state, that is, just as they are being liberated from a compound, if a sulphuret which is readily decomposed by heat be used, the process of sulphuration will be more active. In selecting a sulphuret, it is desirable to choose one which will not be the means of introducing a troublesome ingredient into the gold. For example, if a sulphuret of zinc were used for the removal of lead, we would gain little or nothing; as, instead of an alloy of gold and lead, we would have one of gold and zinc.

The native sulphuret of antimony is, perhaps, the most convenient of the sulphurets. This is a sesqui-sulphuret, and is readily obtained in most drug stores. It is desirable to resort to sulphuration only when the alloy is rendered very coarse by the presence of base metals. The alloy should be melted in a large crucible, and about twice its weight of the native sulphuret should be added, a small quantity at a time;

and the roasting should be prolonged in proportion to the quantity of base metal present. As the sulphuret is decomposed, the sulphur unites with the base metals, converting them into sulphurets, and the antimony unites with the gold, forming a leaden colored alloy. The antimony is to be expelled by melting the alloy in a clean crucible and forcing a current of air on its surface, with a bellows. The antimony is oxydized, and passes off in vapor. The air should not be applied too rapidly at first, as the rapid escape of the oxyd of antimony might carry off portions of the gold with it. A distinctly visible escape of vapor is evidence of sufficiently rapid oxydation. As the antimony escapes, the melting point of the alloy raises. The force of the fire must, consequently, be increased.

We conclude, then, that, if lead be the contaminating metal, the oxydating process is the preferable one. Nitrate of potash will, therefore, answer the purpose. It is important to use clean crucibles; and to change for fresh ones, if a prolonged roasting is necessary. Zinc may be separated by either oxydation or chlorination, without much difficulty. Tin is much more readily removed by the latter, than by the former process. Indeed, it is oxydized with such difficulty, that, when protected by the gold, it is almost impracticable to remove it entirely by oxydation. Iron may be separated by any of the three processes.

In many cases, tin, lead, and zinc, are all present. If persuaded of this, we usually begin with oxydation. If after reasonable roasting with nitrate of potash, the alloy is still brittle, we infer that the difficulty arises from the presence of tin, and we use the chloride of mercury (corrosive sublimate).

But if the alloy be very impure, we prefer the wet method which we will notice directly, and by which we obtain pure gold, which may be reduced to the required standard.

The management of filings, with but slight modifications, is to be conducted on the same principle as that of scraps.

Particles of iron or steel derived from the file are usually present. These may be readily removed by the magnet before commencing other treatment. By digesting the filings with nitric acid, in a glass or porcelain vessel, the base metals are oxydized, and converted into nitrates, which are soluble, and may then be removed by washing with water. Metals, when minutely divided, do not always flow readily together when melted in a crucible. The tendency is to the formation of minute globules, which remain separated from the mass. A good method of overcoming this is to use, as a flux, the dry carbonate of potash, the *sal tartar* of the shops. If the crucible be lined with borax, and the filings be added, after digesting in nitric acid, the addition of an equal bulk of the carbonate will answer all purposes. By raising the heat to the melting point of the filings they will then run together into a single mass, which may be refined if necessary, as above described for the treatment of scraps.

It is scarcely necessary to mention the use of borax as a flux, in this connection. When the gold is of the proper quality for dental purposes, the addition of borax protects it from oxydation, which might, when unprotected, lessen the relative quantities of copper and silver in the alloy. And, as all metallic oxyds are soluble by heat in this salt, it insures clean metallic surfaces for contact, and, consequently, a ready flowing together of the melted metals.

When the alloy is composed of metals differing but little in their affinities for oxygen, chlorine, etc., we resort, as stated above, to one of the "wet methods." And, in this connection, we will only describe the one which we consider the most convenient and effectual for the practical dentist. It is effectual in all cases, as it always gives us pure gold.

Let us, then, suppose that our gold alloy has become contaminated with platinum to such extent that the color and elasticity of the plate is objectionable. The alloy should be dissolved in nitro-hydrochloric acid, called *aqua regia.* The best proportions for aqua regia are three parts of hydrochloric acid to one of nitric. If the acids are at all good, four ounces of the aqua regia will be an abundance for an ounce of the alloy. The advantage of using the acids in the proportion of three to one, instead of two to one, as directed in most of the text books, is that when the solution is completed there is but little, if any excess of nitric acid. If the acids be "chemically pure," four parts of the hydro-chloric, to one of the nitric, produces still better results.

By this process the metals are all converted into chlorides; and, as the chloride of silver is insoluble, and has a greater specific gravity than the liquid, it is found, as a grayish white powder, at the bottom of the vessel. The chlorides of the other metals, being soluble, remain in solution. By washing and pouring off, allowing the chloride of silver time to settle to the bottom, the solution may be entirely separated from it. The object is now to precipitate the gold while the others remain in solution. This precipitation may be effected by any one of several different agents, but we will mention only the proto-sulphate of iron.

This salt is the common green copperas of the shops, and, as it is always cheap and readily obtained, we need look no further. It should be dissolved in clean rain-water, and the solution should be filtered, and allowed to settle till perfectly clear. Then it is to be added gradually to the gold solution, as long as a precipitate is found, and even longer, as an excess will the better insure the precipitation of all the gold. The gold thus precipitated is a brown powder, having none of the appearances of gold in its ordinary state. The solution should now be filtered, or the gold should be allowed to settle to the bottom, where it may be washed after pouring off the solution. It is better to filter than decant, in this case, as, frequently, particles of the gold float on the surface, and would be lost in the washings, by the latter process.

Minute traces of iron may adhere to the gold thus precipitated. These can be removed by digesting the gold in dilute sulphuric acid; and, when the process is properly conducted, thus far, the result is PURE GOLD, which may be melted, under carbonate of potash, in a crucible lined with borax, and reduced to the desired carat.

The chloride of silver may be decomposed by mixing it with granulated zinc, and digesting it in dilute sulphuric acid. The hydrogen thus generated takes the chlorine to form hydro-chloric acid; and pure silver is left in a fine powder, which may be melted under borax or carbonate of potash. Or, if the carbonate of potash be first fused in a large crucible, and the chloride gradually added, it is decomposed; and when the heat is raised to the melting point of silver, the metal flows to the bottom of the crucible, where it should be allowed to cool, as it would not readily pour from the crucible under such circumstances.

The separation of the platinum from the solution will probably be noticed in some other connection.

"A HIGH STANDARD OF ATTAINMENT THE DEMAND OF THE AGE."

An Address at the Commencement of the Ohio Dental College, 1859, by the President of the Board of Trustees,

B. P. AYDELOTT, D. D.,

"LOOK ALOFT! LOOK ALOFT!"—was the emphatic direction of a chief officer on the quarter-deck of a tempest-tossed ship, to a man far up in the rigging. He was a green hand, and had been ordered to the mast-head upon duty. Gazing downward from the giddy hight, he was bewildered; a tremor seized him; his grasp was fast relaxing; in a moment more, he would have fallen upon the deck below and been dashed to pieces, or been swallowed up in the yawning gulf. The officer saw his danger, and knew the remedy—the only possible means of escape. Hence the instant, urgent cry, "LOOK ALOFT! LOOK ALOFT!" Nothing could save that imperilled man but turning his eyes away from the fearful depths below and fixing them upon the immeasurable expanse above. A spectacle so sublime would, by a law of his nature, restore him to calmness, and confidence, and strength. The man was saved.

But mark. This scene was witnessed by a youth on the deck. He was poor, uneducated, friendless; and had gone to sea as a means of procuring his bread, and perhaps, also, to gratify a roving disposition and a love of novelty. But the words—look aloft, look aloft—as they fell upon the ear of this forlorn boy, suggested to him a much higher sense than they were intended to convey. "Where am I?" thought he; "what am I doing here? Shall I be content to remain an ignorant, reckless sailor, soon, perhaps, to be shipwrecked and lost at sea? or, still worse, to sink into an early grave the victim of drunkenness and vice, leaving no trace of usefulness, no name of honor behind? forgotten as speedily as the bubble that bursts upon the ocean's bosom?"

From that moment his resolution was formed: "*I will look aloft! I will look aloft!*" was his noble resolve. He applied himself to the pursuit of knowledge; every opportunity was carefully improved; every moment faithfully employed. He advanced—onward and onward—till at last, after years of toil, he reached the Chair of Anatomy in one of our most distinguished Universities.

In a style clear, easy, vigorous, and often very beautiful, he wrote much upon the natural sciences, also, and attained to great eminence in this department.

But he did not long stop here, lofty as his position was. There was something higher which he had not yet reached—something, to which, indeed, he not even looked. Let us follow him, then, a step further in his brief but brilliant history.

For some days he had missed a pupil from his public lectures. He inquired after him from his fellow-students, and found that he was sick. With that sympathy which every professor should feel for each member of his class, he immediately went to see him. He found the young man very ill, nigh unto death. The case was decidedly fatal; and the student, though perfectly aware of his own condition, was yet calm and cheerful.

The Professor was surprised at what he beheld. "Here," thought he, "is a young man, in the bright morn of life—talented—looking forward to high earthly position and much happiness;—but all his prospects are now darkened, his hopes all cut off; and yet he is not at all impatient, or depressed, but calm and cheerful. How can this be? Were I in his situation, I would be, of all men, the most miserable. There is a mystery about this case I can not see through. I must inquire into it." He asked the sick student, how it was he could be so tranquil and cheerful in circumstances so sad? The young man immediately revealed the secret of his happiness—"I am a *Christian*," said he—"a *Christian!*"

The Professor was too much of a philosopher and had too much of common sense, not to be aware that there could be no effect without an adequate cause. He went home, therefore; took his neglected Bible from the shelf, and began to examine its teachings, in order to ascertain, if possible, how the reception of these could produce results so wonderful and benign. Ere long the truth, with heaven's own brightness, shone into his heart, and he himself was made by divine grace to know, in his own soul, what it is to become a new and happy man in Christ Jesus. And thus was he, at last, led up, step by step, to the sublimest realization of that suggestive cry that first aroused him to effort—"Look aloft! look aloft!"

This cry first fell on his ear—a poor sailor boy—and roused him to a career of intellectual improvement—upward and onward, upward and onward—till he found himself in the Professor's Chair. And then, as we have seen, awakened to a conviction, by the facts witnessed at the dying bed of his young friend, that there must be still another hight to which he had not yet attained, he again looked aloft, looked aloft, till "the day-star" dawned upon his heart.

From this time he walked forth, not merely as he had been wont, in all the usefulness and honor of an eminently scientific and literary man, and a richly furnished professional man; but in the still higher attributes of one whose distinguished privilege it was daily to sit together in heavenly places in Christ Jesus;—one, therefore, whose character and life were thus manifestly clothed, in the eyes of all around him, with sweet and most powerful attractions toward that "life and immortality brought to light through the gospel."

But, my young friends, are not your circumstances, in many respects, the same with those of the honored and happy individual here briefly alluded to? You have been taught to "look aloft" to the highest position of professional attainments and usefulness; and, I trust, that you have also been taught that there is an elevation and usefulness which no merely professional or scholarly attainments can achieve. The character of your professors is to me a guaranty that they have endeavored to be faithful to you in this other and most important matter.

But it can not be amiss for one coming to you, as I do, with the weight of years, and of very long professional standing, and clothed also with the highest official responsibility with which the authority of the State could vest him—to ask your serious attention upon this occasion, so momentous in your history, to a subject suggested by the incident we have just briefly sketched. Our subject is then—The necessity of a HIGH STANDARD OF ATTAINMENT.

If we have not altogether mistaken the signs of the times, the world is now calling to you in the tones of a clear, energetic command—"LOOK ALOFT! LOOK ALOFT" First, then, we say—

I. Look aloft *Professionally.*

Time was, we know, when the Dentist was little more than a mere tooth-puller; and too often quite poor at that. But he did well enough then, for no more was expected of him.

Now, however, things are totally changed. He is at this day called to take rank as a Professional man. He must now, therefore, be not only well skilled in his art, but thoroughly furnished in all the sciences which can throw light upon the subjects and the practice of his profession. Anatomy, physiology, pathology, therapeutics, chemistry, materia medica, and more or less of the natural sciences—are all required of him, to understand the evils he is called to grapple with, and the benefits he is expected to confer upon those who put themselves under his care.

No man, whatever readiness he may have acquired in the ordinary routine of the profession, can intelligently practice Dentistry, without more or less acquaintance with these various sciences.

He is not prepared, if unlearned here, to give a reason—the why or the wherefore—for what he does. And should, at any time, as is not seldom the case, the ordinary means and methods fail, he can not, for want of the lights of science, strike out and pursue with confidence a new path to success.

Moreover, the unscientific dentist can never do much to extend the boundaries of his profession, or add to its resources or honors; and hence he can not take a high position among his brethren.

And the Public, too, are quite awake here. They expect to see the practitioner of the dental art well grounded in professional sciences. If, then, in this day you would acquire public confidence and patronage, or retain these, you must look aloft, you must ever keep before you a high standard of professional attainment; you must aim at great things. In a word,—you must win all, or lose all.

But again, the world expect in your profession—

II. A high standard of *general intelligence.*

One of the most striking and cheering characteristics of the day is the almost universal diffusion of knowledge. Education, once shut up to the select few, is now open to all classes. There is scarcely an individual, however humble his position or circumstances, who can not, if he has the capacity and the spirit so to do, rise to the highest rank of scientific and literary attainments. The result is, we have now a hundred really learned men where there were scarcely ten such fifty years ago; and, in point of general intelligence, the present generation is far in advance of the preceding. And there is every reason to believe that this progress will be accelerated with *avalanche* speed.

But if it be so with society at large, what must be the position of the learned professions? These are all expected to take the lead, to occupy an advanced position before the popular mind, if they would continue to benfit society and hold their own honorable standing. The professional man who does not keep ahead of the community, not merely in professional attainments, but in general intelligence also, must quickly be stript of his advantages and sink into contempt. To come up to the average standard of merely professional attainments will not do now. The public demand at this day that the Dentist, as well as the Physician, and the Lawyer, and the Divine, be a man of general information. He must be able to converse well upon the various topics of science and literature, and to appreciate the character and the claims of every department of human knowledge and of the chief laborers in these. If he can not maintain himself in this advanced post of general intelligence, he must suffer all the loss and shame of one who does no honor to his profession and disappoints public expectation.

But there is, once more and thirdly—

III. A still higher sense in which the Dentist must "look aloft." Yes, other and *far higher qualifications* are now required of him than were generally expected even a few years since.

We would, therefore, here, in close, ask your serious attention to these superior excellencies. And in order that you may discern their character and necessity the more clearly and convincingly, let us for a moment just glance backward to the ground over which we have come.

Well, then, my young friends, let us suppose a man to be every thing which we have been describing, every thing which natural talent, literature, science and professional learning and skill can make him; and let us suppose, too, that in the faithful employment of these he has attained to the highest position of professional usefulness and honor. How long will this last? How long? Perhaps twenty, thirty, and, in some rare cases, it may be forty years. And is this all? Will mere intellectual endowments and attainments do no more for him? Must these all soon and forever be buried in the grave with him? Has he brought all his abilities to the work, and then toiled so hard and so long, only to be soon and for ever torn away from his field and see no more of the fruits of his efforts? What waste would this seem to be of mind, of labor, and of learning. And if this be indeed all, what a wreck of human hopes is here! Verily, the more successful our endeavors, the more bitter our disappointment!

But this is not all; and few, if any, now think it so.

> "'Tis immortality deciphers man,
> And opens all the mysteries of his make.
> Without it, half his instincts are a riddle;
> Without it, all his virtues are a dream."

We need not, therefore, say *how*, it is, but it is, nevertheless, the fact that, the world around us have come to such a point of enlightenment as now clearly to see that high moral principle, or, in other words—a *pure heart* is ordinarily essential even to high intellectual effort, and to ensure a successful career, especially in professional life. He who is most under the influence of a *pure heart*, will be sure to possess that calm, hopeful, energetic, far-seeing, lofty-reaching spirit that will best fit him for intellectual exertion and success, and best enable him to labor for and secure the most distinguished professional position. Hence the world will be sure to have most confidence in that man and give him the most substantial evidence of their regard.

But let it always be borne in mind that, this state of heart so neccessary to him who would acquire the highest qualifications, intellectual and professional, for success in life, —this purity of heart, we say, can not be attained if these qualifications and success are all, or even the chief thing the man has in view: he must seek these merely as a means to a higher end. He must pursue science, and literature, and professional knowledge and skill, and success in the use of these, as all subservient to the noblest purpose, the true goal of human aspiration,—the improvement and elevation of his own moral and spiritual nature, the highest good of his fellow men, and the glory of God.

But where can this pure heart—the everwelling spring of true morality, of all human excellence,—where can it be obtained? On what does it rest? We answer—It is God's highest gift; and to Him, therefore, in our deepest need and struggling under our weight of solemn responsibility—to Him must we ever look. It is the fruit, also, of a simple, child-like faith in the great truths of His glorious gospel, and the renewing influences of His Holy Spirit. And, be assured, that he who thus "looks aloft" will more than realize his own sublimest hopes. But with any lower aims, whatever his talents or exertions, his life can not but be, at the most—*a splendid failure.*

Young Gentlemen, you are just about to embark on the ocean of life. All will not be a calm sea before you, and prosperous breezes. You have rocks and storms and breakers to encounter. But there is a desirable port and a glorious land beyond. How unspeakably important that you reach these. Not to do so is to founder and perish. Permit one who has now nearly crossed this perilous sea, and who can not be far from the haven, to give you, before we part, a few sentences of affectionate advice.

First, then, let the word of God always be "the man of your counsel." Read it daily with an humble and teachable heart, ever looking up in prayer for the illuminating and renewing influences of the Holy Spirit. You will in this way never be at a loss to know your duty and do it. "If any man lack in wisdom," says an inspired writer, "let him ask of God, and it shall be given him; but let him ask in faith."

Again,—Read much. Write much. Teach much; for to teach others is the way to become the most thorough scholars ourselves. Be continually adding to your library; count that money well spent which puts a good book upon your shelves.

Further,—be diligent in practice: and recollect that whatever is worth doing at all, is worth doing well. A careless, perfunctory operation can scarcely fail to impair your powers of usefulness as well as your worldly interests; while every accurate, careful effort will be equally sure to render you the more thorough practioners and give you desired success.

Moreover,—think that day lost whose study and labor have not given you one new idea, or enlarged your capacities for usefulness.

And again,—as we all must be more or less dependent upon each other, try to learn as much as possible from others, and to profit by their influence. For this purpose secure their good will by always exercising good will to them. "He that hath friends," says the wise man, "must shew himself friendly." Therefore, cherish in your heart a real kindness for every human being, and be courteous to all men. It is good to be a general scholar—a man of science and literature; it is good to be a learned professional man; and it is best of all to be a true Christian; but it is good, also, to be a *gentleman.*

And these good things are all before you. They are the excellencies which you must ever reach after, the prize of your high calling. But the work is arduous. Labor, vigilance, wisdom, are all necessary to success. And failure involves tremendous consequences here and hereafter.

But be of good cheer; quit yourselves like men; be strong. Blessed be "the Father of Lights,"—we have an infallible directory—"LOOK ALOFT! LOOK ALOFT!" in the highest, truest sense. Yes, look upward in faith to a CRUCIFIED SAVIOR and an OPEN HEAVEN: and such a light will then ever shine upon your path, and such a courage spring up in your heart as can not fail to render you able, useful, honored, happy here; and so fit you at last for the higher excellencies, usefulness, and blessedness of a glorious immortality!

AN ADDRESS,

To the Graduates of the Ohio College of Dental Surgery, Session of 1858–59.

BY W. W. ALLPORT, D.D.S.

GENTLEMEN:—In what I have to say this evening, I desire not so much to amuse you with the flowers of Rhetoric, as to say a few plain and earnest words, which will be of use to you as you go out from this hall to engage in the duties of life.

Your preparatory course has ended, and your professional life is begun.

A vigorous and systematic course of preparatory training is requisite for success in any honorable calling. You have had the privilege of thus preparing yourselves for the Dental profession; and it will always be a pleasure for you to look back upon the thorough training you have here received, unless you have wasted these advantages by your own neglect. If you have had no higher ambition than to pass the examination of this College, and see your names ornamented with the title of D. D. S., you might have spared yourselves both the anxiety and expense; for unless you deserve it, the title, in the end, will be useless. It may serve you as an introduction—very likely it will to some extent—but so far as it does, the world will expect that the title represents skill, and that you are what you seem to be.

False colors in a profession, like the "ALIAS" of a rogue, may serve as a temporary shift for dishonesty; but in the end it will bring disgrace. As in the fable, the ass in the lion's skin is revealed by his bray. In this country, titles amount to very little. The people, to get rid of a brawling demagogue, may send him to the legislature; but his "*rising in his seat*," or having "*Hon.*" printed before his name, does not make him a statesman.

Such men as Jefferson, Clay, Calhoun and Webster made the title of "Honorable," really of *honorable* distinction; but it has been so often disgraced, that now it may be more than doubted whether it is a higher title than the plain English "*Mr.*" The community care but very little whether a name begins with *Hon.* or ends with Esq.

A medical College may, for a *consideration*, make an M. D.; but no college can make a Mott, a Brainard, or a Hamilton. The M. D. will make a "*Doctor*," and four 'bits" invested in the skill of a painter, will do the same; but neither will make the *true* physician or surgeon.

Some rich congregation may secure a D. D. for a dull pastor, but

> "The pith o' sense and pride o' worth,
> Are higher ranks than a' that."

and the people will be glad to exchange preacher, doctor and all, for the brains of a Beecher, a Barnes, or a Schyler. Titles are often purcharsed, and sometimes stolen. Small men, like small inns, are apt to thus assume large names. There is hardly a log city in the country without its "Astor," or "Girard House," or a "United States Hotel," a story and a half high; but the names do not make the inns more inviting; and he who trusts to the large name of a public house, as a guaranty of comfort, or to titles as an indication of a man's ability, will be very apt to receive *bites* not indicated by the titles, or advertised in the "bill of fare." I trust, therefore, it has not been for the title, but for the *instruction*, that you have attended this College.

The title of Doctor has been supposed to represent learning and skill in the healing art; but it has been so largely appropriated by itinerant lecturers, horse doctors, and the unlettered in science generally; and Medical Colleges have made so many "Doctors," where they had not the *material* to make *Physicians*, that it now really means only that a dabbler in medicine has hired an office, and "hung out his shingle."

The quacks in our profession usually write Dr. before their names; and I am sorry to say, in the rivalry to graduate a a large number of students, our Dental Colleges have, in some cases, been induced to follow too nearly the example of our mother profession, and have allowed unworthy persons to write that which was *designed* as a title of merit, after their names. The title you have just received is so little understood by the public, that if you use it, it will require the word "Dentist," to explain its meaning; and you will agree with me, that it would not be in as good taste for even Maynard, Taylor or Dunning, to display his title of D. D. S. on his sign, as the plain word Dentist. Some of our profession seem to think that dentist is not respectable enough. This, to say the least of it, is a foolish weakness; and, may I not add that in a majority of such cases, (in even their own estimation,) the title they would assume would be the most *attractive* portion of their names.

If it were proper, I could mention scores of men, whose abilities, both natural and acquired, would adorn and enoble any profession; and yet they ask no other title than Dentist. It is by this title that you will be known. If it is not of equal respectability to that of any other, certain it is that it is not because ours is not a useful profession, but on account of those who practice it; and it is your duty to help to make it of equal respectability to that of any other. The only value of your title is to tell your calling, and if you honor it, as I hope you will, you need ask nothing more, and the people will apply the title of Doctor to you, to your heart's content. For this reason, I advise you to tell your painter to make you simply—"JOHN SMITH, DENTIST."

When your location has been chosen, it is not likely that your sign will attract a crowd at first. The sign only tells where John Smith, Dentist, lives. Who *Smith* is, few know, and *fewer* care. As yet, John Smith is only a member of the "Smith family." The glitter of the new sign may attract some who are out *shopping*, for "sets of teeth ready made," or who desire to know where dentistry is done "to order," on the shortest notice, and "*most reasonable terms*." But the thinking and paying portion of a community will not be in a hurry to believe John Smith, the new dentist, to be the greatest man in the world, until they know something about him. They intend to find out who he is, what he knows, and what he can do, before they give him much employment. They will ask a hundred questions about him, of which he never dreams. Is he a man of *character?* Is he intelligent, honest, and skillful in his profession? When these, and similar questions, are answered favorably, they will trust him, and put their wives and daughters under his care. When he has *merited* a good character, he will *have it;* and John Smith, *Dentist*, will be an institution, and be regarded as one of the necessary workers of society; and success will not depend so much upon the gilded and *ornamented* "John Smith," that swings on the outside of the office, as upon the *honest* and *skillful* John Smith, who works within.

The first patient will be an important event in your professional life. Do not think it makes a man wise to put on wise *looks*. You will never make a greater mistake than to suppose that you can impress *sensible* people with the idea that you are a great man, by putting on *airs*. You should not assume knowledge you do not possess; neither should you allow a lack of independence to prevent you from impressing your patient with the knowledge you do *really* possess of your profession. Your best way will be, to express your thoughts, and answer plain questions, in plain words.

It is to be presumed, if you do not know to the contrary, that your patients speak the English language, and will understand it at least as will as French or Latin.

When patients come to us for counsel, they desire to learn facts, and not to take lessons in the languages, or in the glossary of dentistry. Our profession is in its nature such, that almost every patient can be made to understand its principles, if we use plain English to explain it to them; and as our object *ought* to be, to instruct our patients, we should speak to them in language they can understand. This you may think of very little importance; but in some cases, you will find, that it will make the difference between business gained and business lost. My advice to you therefore is, to speak your mother tongue.

Your office should be cheerful; for a cheerful room makes a great difference to a sufferer. Your furniture should be neat, carefully selected,—enough for use, and too little for display. It ought to be equally removed from the profusion of a furniture ware-room, and the barrenness of a miser's apartments. It will not add to the attraction of your office to make it the fac simile of a bar-room, with the vile smell of cigars and tobacco; nor will the recollection of it be more pleasant, if it be uncleanly and in disorder.

In this age of extravagance, you may be tempted to believe that rosewood and damask are patents of nobility. You will find, however, that your office will be furnished better, whether it be cheaply or expensively, when it speaks to every one that its occupant is a gentleman of taste. There is a quiet air of confidence inspired by neatness, and no heraldry so proclaims the gentleman as a well-ordered dress. Few things are more civilizing than cleanliness. Outcasts seldom indulge in the luxury of soap and clean linen. In some cases, it is true, the *hand* would be the thing contaminated, yet the Dentist who neglects cleanliness, and expects to thrust his dirty hands into a lady's mouth, should be regarded as unworthy of decent society.

You should endeavor to prevent your office from becoming the resort of loungers. There are few things more embarrassing to a delicate woman, than to meet, face to face, in the consulting room of the Dentist, half a dozen loungers, whose idleness must make them professional gossips. Some patients are very sensitive to any defects or decay which speak of the inroads of disease, or time; and you can not more effectually drive such patients from you, than to let them know that your office is the idlers' lounging place. You should remember that your relations with your patients are confidential, and there can be no apology for revealing them yourselves, or allowing those who will, about you. Promptness and industry on your part, during office hours, and strict attention to your professional duties, will free you from the annoyance of these idlers, who are gossips because they have nothing else to do. With promptness, on your part, to meet your engagements with your patients, you have the right, which you should *insist upon*, to demand promptness on their part. This will save the time of all and give the business man confidence in you as one who looks after the details of his business; and will also prevent conflict in your appointments.

You should provide yourselves with a register of convenient form, in which you can keep a correct record of all your operations, and write out an accurate description of all peculiar cases; this will frequently prevent misunderstanding with your patients, in regard to the failure of your work, and will also, in a few years, furnish you with a series of facts, which otherwise would have been forgotten, from which you can draw accurate conclusions, and upon which you can base improvements in practice.

In selecting your instruments, avoid such as will make a display. Gold ferules and pearl handles, set with costly stones, are made for show. As your object is not to impress your patients with terror, it will be better for their nerves, that they should not be awed by a display of costly instruments, *designedly* made conspicuous, until they think your office is intended as a place of torture. In most cases, the patient's imagination has quite as much to do with his suffering, as real pain; and it may be questioned, whether a formidable array of dental instruments is the best anodyne for weak and unstrung nerves.

Your instruments should be of the best, and, like "*Toledo blades,*" made for *use.* They should be plain and simple, yet so neat as to attract as little attention as possible.

Your operating case should be well filled, and every thing kept in perfect order. As I have said, your instruments should be of the very best material, the points made with precision, and tempered with the greatest care. Provide yourselves with proper files, and other conveniences; then keep every instrument in perfect order, and ready for use; for even a good workman can not excel, with inferior tools.

Never allow yourselves to be deficient in necessary instruments of any kind; yet, with system and proper judgment, you will need a much less number than you may suppose. Our best operators are, by no means, those who use the greatest number of instruments. Too many will confuse you, while much time will be lost, and your operations may be spoiled, by the saliva, when you are looking for, and exchanging instruments.

It is necessary that you should have a manly independence; and to feel this you must be out of debt. If the kindness of friends, or the forbearance of your teachers, has furnished you with the means of education, or assistance, to enable you to enter upon the discharge of your professional duties, you ought to repay them from your very first earnings. No man has a free will and cheerful heart, who goes to his work the slave of debt. It fetters, at every step of life, and leaves the door open for continual misunderstanding, and may sever the closest friendship. A prompt paymaster must be a good collector. Success in any business depends very much upon a careful attention to bills payable and bills receivable. You will also find that work which is paid for, will fit better, and last longer, than work unpaid for. With some patients, few things stop the uneasiness of a newly filled tooth, or remedy the defects in a new set of teeth, or add to his reputation like the honest payment of the Dentist's bill. Few callings give greater room for misunderstanding than our own, but you will find that honest work for honest people will give but little trouble.

It is a common fault of young practitioners to promise too much. Let me caution you against this; for you will find that *all* are liable to failures. You ought to do your work well, but never *warrant* it. When the real benefits of dentistry were not understood, or acknowledged by the public, perhaps it was proper that the dentist should guarantee a result, which was doubted by a majority of even intelligent people; but now the intelligent regard dental operations as not only useful, but indispensible to health and comfort, and no such necessity for a guarantee now exists. The patients who come to you acknowledge, by their coming, their belief in the benefits of dentistry, and in your skill. You occupy the same relation, in this respect, to your patient, that the physician does to his. The honorable physician never agrees to cure his patient. He knows that if treated ever so well, the patient's own neglect, or carelessness, may make that treatment useless, and even injurious. The *Quack* will not hesitate to guarantee a cure of the most hopeless case, always *provided* he is paid *in advance;* but the consistent physician, honestly tells the probability of success, and then simply pledges his best energies and skill; and on these he relies for business and reputation. No matter how well the Dentist does his work, its durability will depend very much upon the patient's care. If you warrant it, they will be very apt to transfer the responsibility from their own shoulders to yours. The value of your work depends upon the action of both; and if either fail, the work will fail. On your part, the honor of a man, and skill in your profession, call for the very best work. On the part of your patient, care and cleanliness must be observed. You will find it to be of great advantage, especially with children, to request, and *insist*, that they should see you often. You ought then, as far as possible, to insist upon the thorough cleanliness of their teeth; and if they will not attend to this, your work will fail, in spite of the best operations.

If your work does fail, and you can see that the fault is yours, you are bound, as an honest man, to make it good; but if the fault is not yours, your patients have no right to hold you responsible. Our *poorest* and most *unprincipled* dentists are those who give the most positive guarantees against failure.

I think it was Poe who said, "Quack is an ugly word, which never should be used except in the mouths of ducks;" but we have a right to say, that the physician, or dentist, who stoops to the expedient of warranting, in order to gain business, degrades himself and his profession, and *well-merits* the appellation of *Quack.*

Fix your own value upon your services, making it a matter of *pride* and *conscience* to give an equivalent for *fees* demanded and you may confidently rely upon the good judgment of community to sustain and reward you.

In regard to charges for consultation fees, I have only to say that, if your patients take up much of your time, you certainly have the right to charge for it. In this matter, however, you should exercise good judgment. If you err in either direction, let it be on the side of liberality. But an advertisement of "*advice free*," by a physician or dentist, is about as indicative that the advice will be worthless, as that the traveler will find himself enjoying the comforts of a third class hotel, who accepts an invitation to ride in a free 'bus.

Your charges for your services should be in proportion to your skill.

If labor and application has made you more skilled in your profession than your neighbor, there is no reason why you should not receive a just reward. Your skill becomes your *capital*, the value of which no man can estimate who has not passed over the arduous road by which it has been gained.

Were it not for this estimate of skill, the services of the architect or builder would be estimated no higher than those of the wood-sawyer,—the surgeon of Velpeau or Jobert above the bungling of a quack; the ability of a Choat, or a Webster, would not be valued above that of a petifogger.

Our specialty in the healing art will seldom make it necessary for you to visit the sick room; and perhaps never to stand by the bed of the dying. You will, however, be called to witness much suffering; and, when inflicted by yourselves upon sensitive women and children, you will be glad to be relieved from the unpleasant duty. Your patients do not come to you from choice, but from necessity; and you are called to do your duty, even though it conflicts with your sympathy. You should study to make the pain of your operations as light as possible; but no consideration should prevent a faithful performance of your duty. You should always be kind; but there are few cases, where your sympathy expressed, will not excite rather than relieve your patients' fears, and make them less able to endure the necessary suffering.

In no case, be rash or hasty; but when you know your duty, be firm, and push on your operations with manly courage. Your courage will incite courage in your patient; and he will not only submit, but respect you the more, when he sees that a conscienteous desire to benefit him is the mainspring of your action. I am aware that the dentist who does this, will, by some, be called harsh and cruel. The unthinking, who love *humbug*, will prefer the Quack who promises to perform all operations "without pain;" but those who are desirable as patients, will cheerfully submit to whatever you think necessary. It is as true in dentistry as elsewhere, that honesty is the best policy. From my own experience, I am prepared to say, that after explaining to your patients the necessity of thorough manipulation on your part, and a careful attention to the cleanliness of the teeth on their own, if they will not submit and follow your advice, your reputation and pocket will be better off, without their patronage than with it.

You will not please all, and it is better to run the risk of displeasing ignorance and self-will, by doing your duty, than to degrade your profession, and hazard your reputation, by attempting to please unreasonable people.

Great allowance must be made for the lack of judgment and fortitude in children. With these you must be especially careful to unite gentleness with firmness. Never deceive children by the foolish lie that you will not hurt them. If parents have done this, undeceive them, and explain, as far as you can, the real necessity of the case. Your frankness will gain their confidence; and a few moments' talk, in a kind manner, about their sports and plays, will make them feel that you are their friend, and the little ones, in most cases, will sit down to bear the pain with the fortitude of heroes. Do not think you have no time to spend with children in this way, and that it is a matter of no account. The child which is brought to you to-day, will soon meet you on the street as your equal; and if you treat him kindly, he will remember you, and prove your true friend.

Sometimes no talking will induce children to submit to what you think necessary. In such cases, if your services are of *real* importance to them, you should not hesitate to resort to force. This should always be done in a kind, but resolute manner, and when you undertake it, never yield, until you have accomplished your object.

You should strive to do all work well, and never degrade a noble calling by the dishonest expedients of quacks. You will certainly meet with failures in your operations, and sometimes when you least expect it. Business may come in slowly, and dark hours seem to gather around you; for "hope deferred maketh the heart sick." But if you are patient in gaining work, patient in doing it well, and are honest and faithful, you need not be discouraged; for though the school of experience gives some hard lessons, patient striving will lead to success.

You must aim to have an unsullied character. The dentist has the most intimate relation with his patients; and he owes it to himself and others that his thonghts and example should be elevating. You can not separate your private, from your professional character. The habitual Sabbath breaker, the irreverent scoffer, the foul blasphemer, or the sensualist, who dishonors God, and does violence to the most sacred feelings of the human heart, does not deserve a place in any honorable profession.

A few years since, the advantages which you have enjoyed, could not be procured at any cost. In fact, the demand for dentistry was then small; and it required very little natural or acquired ability to meet all demands for the dentist's skill. No dentist was suspected of being a scientific man. A few months' teaching was enough to enable almost any one to become a dentist; or an ingenious Yankee could "take it up of his own head," without the risk of being accused of having an excess of brains.

As refinement and civilization increased, the demand for dental operations, dentists increased in number and character. These men saw that dentistry could be made a branch of the healing art,—a specialty in medicine. They determined that they would withhold no secret from their professional brethren, who were prepared to engage in this enterprise with them. They formed the "American Society of Dental Surgeons," where they might freely consult together upon the principles and practice of their profession. The "American Journal of Dental Science" was commenced, with its pages open to all who had any thing to communicate of advantage to the new profession. It was soon found that the improvements in the art had been so rapid and so great, that a few months' private instruction was not enough to qualify beginners to practice it. A thorough and systematic course of preparatory training was demanded; and to meet this requirement, the Baltimore college of Dental Surgery was started. A few years later the Ohio College, and still later the Pennsylvania and New York Colleges, the latter of which perished in its infancy, not on account of its "*feeble* progeny," but from fire and treachery.

Discovery has followed discovery,—art and scientific research have been stimulated, and applied in our art, so that dentistry has risen, in the last quarter of a century, from a catch-penny calling, to a useful and respectable profession. Some of its pioneers have lived to witness these great triumphs. To-day they see it enjoying the benefits of colleges, and a literature, of which, professions much older might well be proud, and men engaged in practice, whose abilities would be ornaments to *any* profession.

As you look about you and see the changes that have been made in our art, you must not imagine that the world has stood still to witness the progress of our Profession. Our calling has but partaken of the spirit of the age. In the honored field of medicine, in minerology, in astronomy, in geology, in mechanical invention, in agriculture, and in almost every other field of labor, there has been a great improvement. We are now living in the most remarkable age of the world. Every avenue to wealth and eminence is crowded; and every one is striving with his fellow, for distinction. Into this world of thought and labor you are about to enter; and you owe it to this College, that, like dutiful sons, you shall win laurels, to lay at the feet of your *Alma Mater*.

Aside from your own character, which must share the reputation of your profession, you should seek to fill its ranks with educated men. It is doing a great injury to ourselves when we take the young men from the plow, the work-shop, or the counting-room, and, after a few months spent in our offices, send them forth to practice dentistry. The time has come when we should rely upon our dental colleges for the training of those who desire to enter our profession in a legitimate way. Deny it as much as some will, our colleges offer advantages for training the student, possessed by *no private office.* Private instruction in ours, as in the medical profession, is desirable; but it should only be given to students preparatory to college instruction.

There is no common trade which admits men to its ranks without discipline and training. Six months, or a year, with a shoe-maker, may make a cobler, but not a finished workman. You would not trust the apprentice of six months to shoe your horse. You ask that the tailor shall be master of his work; and yet it is the custom of many dentists (and some from whom we should expect better things), to take young men, and those who can hardly get a living at any thing else, and, after from six to eighteen months' drudgery in the office, send them out with letters of recommendation, to defraud the public, and to degrade our calling.

In every profession which requires skill, there is great need of thorough training; and yet Dentistry, which requires a knowledge of anatomy, chemistry, physiology, pathology, materia medica, therapeutics, and mechanics and the arts, is too often left to a few months' careless practice, or indifferent instruction, given in the intervals of business. Our profession has not, as yet, given sufficient encouragement to Dental Colleges. Many of them are apt to speak of them as unnecessary. The same was once true of Medical Colleges; but in all civilized communities, they are more regarded as necessary for a thorough medical education.

We have learned to call those quacks who attempt to practice medicine without having passed through the discipline of a Medical College; and may the day soon come, when the community shall acknowledge, by the bitterness of experience, that it has learned the same wholesome lesson, in regard to our colleges and profession. I am aware that many, who have not enjoyed this discipline, have, by their perseverance, worked themselves up to an enviable distinction, both in the medical and dental professions; but this only proves that those men possessed minds and energy sufficient to grapple with and overcome great difficulties. Many of them commenced when we had no dental colleges, and they have well earned their enviable distinction.

The necessity no longer exists for thus entering our profession. The demand of the age is for the best; and he who hopes for success must come to his calling thoroughly prepared. Without this the lawyer is a pettifogger, the craftsman a tinker, the doctor a quack, and need I add, that the man who writes "Dentist" after his name, without a thorough knowledge of his calling, combines them all,—a pettifogger, tinker and quack.

Gentlemen, you owe it to yourselves to take the highest ground for the honor of your profession; and as it advances in scientific acquirements, you will find the day will come when our Dental Colleges will be regarded as necessary for the accomplished dentist, as the medical colleges are for the skilled in medicine, or as universities, like Harvard or Yale, are for the finished scholar.

With energy, sparkling with the sunlight of hope, you look out upon the world, from these pent up halls, and see a wide field for usefulness inviting you forth to labor, and in the imagination, so natural to youth, you see reputation, wealth and position joining hands, to bid you welcome, and crown your efforts with success; but here let me remind you, that wealth never abides with the prodigal, reputation never comes to the profligate, nor fame to the sluggard.

You should husband well your time, and remember that life and reputation are made up of little things; that every act adds to or detracts from an honored name. You can not expect to gather figs of thorns, or grapes of thistles. Character is not a thing of chance, nor skill the reward of ignorance or idleness.

"Link by link the chain is made;
Pearl by pearl the costly braide;
The daily thread of hopes and fears
Weave up the woof of many years.
And well thy labors shall have sped
If well thou weavest the daily thread."

It remains but for you to say farewell to these scenes of pleasure and distinction. As you go hence, to make the trial of the hard realities of life, you should remember that it is not all of life to live. He who estimates life by the money he hoards up, or the number of years, lives but in vain.

"We live in deeds, not years, in thoughts not breath,
In feelings, not in figures on a dial;
We should count life by heart-throbs—he most lives
Who thinks most—feels the noblest—acts the best."

Gentlemen,—in behalf of my profession, I bid you welcome as laborers in its ranks. In behalf of the officers of the Ohio College of Dental Surgery, whose partiality has conferred upon me the honor of addressing you on this occasion, I bid you a hearty God-speed, assuring you that if faithful and honest, you will find a noble field of labor, which will generously reward you for every toil.

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RESPONSE IN BEHALF OF THE GRADUATES.

BY B. B. WARD, D. D. S., OF MOBILE, ALA.

GENTLEMEN :—To the very able valedictory, it would be difficult to reply; and before so many men of science, to say the least, it is embarrassing for one so young in the dental profession.

We appear before you to-night with the lonely word "good-bye," upon our tongues. It is, indeed, a lonely word, frequently causing a tear to start in the eye, and the lips of the strong man to quiver.

Your excellent address bids us God-speed in our profession; and, as young men, looking into the unseen future, your wise counsels are well fitted to guide us through time. I trust that each of us will bind them upon our heads as an ornament, and as a chain of gold about our necks.

The breaking up of a happy household is a scene of no ordinary character; and such a one as this to-night, brings it in bright review. During the past four months, no word has arisen to mar the perfect harmony that has prevailed. Looking into the past, how ably have you discharged the duties that have devolved upon you! At no moment has your energy flagged,—at no hour have your chairs been vacated,—not an item has been omitted that would tend to our advancement.

At the beginning of our session, like an uneducated man looking into a vast piece of machinery, contemplating confusion and disorder, or like an unlettered peasant gazing on the starry heavens, to him a mystery, but to the astronomer's eye all is clear, so we, then looked upon the science of dental surgery with confused minds. But, guided by your light and knowledge, we have seen clearly the end from the beginning.

We might trace the history of dental surgery back to the days of the Pharaohs, when the hot iron, or the boiling oil, was used for the relief of pain; or the palmy days of the Roman Empire, when, like a bud upon the parent stem, she began to grow, liable at any moment to be blasted by the frost of a jeering public. But she bloomed and blossomed, and grew up, the mighty offspring of the parent stem. And how does she stand to-day but like a mighty oak, spreading out its branches and thousands of our fellow creatures seeking relief beneath her shade?

To whom then are we indebted for this noble science, but to such men as you? Men who have gone before you, whose places you now occupy. Men who have drunk deep and tasted of the pierian spring of science. To you and such as you are we indebted for high attainments in our profession. Unlike the selfish man, you have not hid them in a napkin, but have unfolded them to the world, that your fellow beings might be benefited. To relieve the suffering, to instruct the young, has been your aim. What can we render you for such services? What can we offer you in remuneration? Like the Caffre chief released from his fetters, *nothing* but a grateful heart.

When God dipped his finger into the chaos, and dispelled the gloom of the dark ages,—when the sun of Christianity shed forth his light,—when knowledge was increased,—then did dental surgery spring into existence. A few men of medicine turned aside from their legitimate profession, and with the rude instruments of the day, began extraction. But the formative process, employed by nature's God, in the growth of the teeth, was to them a mystery. Without the compass of literature to guide them, with no physiological charts, they lowered their frail boat upon the waves of trouble, and amid the perverse winds of persecution, undaunted and brave, they pushed on to the goal, and laid the foundation of our noble institution. Others soon enlisted beneath their banners. Hunter and Fox, of England, Cuvier and Serres, of France;—but the true history of the development of the teeth was reserved for such men as Retzius and Owen, Arnold and Goodsir. Nor has your energy failed. Following in the footsteps of your predecessors, you have added vastly to this science, built up, in this your city, a noble edifice for the advancement of the profession,—adding much to her literary fame. Self sacrificing in your efforts, you give your time and labor for the advantge of the young; and, ever striving to alleviate the sufferings of humanity, high is the position that you occupy, and of vast importance are your labors to the world. Go on, we say, and God speed you! Weary not in your laborious task; and we will follow in your footsteps.

FELLOW GRADUATES:—How shall I address you? For the past four months we have gone hand and hand in our studies—side by side with the duties that have devolved upon us. How we have discharged these duties is known to us now; for we bear in our hands the evidences of our instructors' approval. Shall we ever bring a stain upon the institution that has given us position in the medical and scien tific world? or dishonor upon the names of those who have labored for our advancement? I trust not. But in whatever community we may locate, let us

> "Pitch our behavior low, our projects high,
> So shall we humble and magnanimous be;
> Link not in spirit,—who aimeth at the sky
> Shoots higher much than he that means a tree."

We separate some for the north, others for the far south,—it may be for years,—or it may be for ever,—but the reminiscences of the past months should never be forgotten. Write the lessons of instruction upon the tablets of your hearts, with a pen of iron, that they may never be defaced. Let us carry home the principles given to us in the Ohio College. Let us aim to have an irreproachable character, an honorable name. Following in the footsteps of our professors, we may soon attain a position among our fellow creatures, that will be respected and revered.

To those students we leave behind, let me say a word. Pursue your studies within these walls. Be guided by those who have guided us. Respect them for their knowledge; honor them for their ages, and a year hence may see you occupying the position we do to-night. And when death steals o'er us, though dead we may yet speak. In passing through life we may strew our pathway with the richest flowers, or leave indellible impressions of our presence in time. Hallowed will then be our names and green our memories. Then, up! up!! as if borne upon the wings of the wind, far above suns and systems. Up! until the watchers upon the battlements of heaven hail us with a joyous shout, "well done faithful servants."

There, gentlemen, we leave you, with the best wishes of your graduating class of '59.

Proceedings of Societies.

MINUTES AND DISCUSIONS OF THE INDIANA STATE DENTAL CONVENTION.

In pursuance of a call made at a preliminary meeting held on the 18th September last, in the city of Indianapolis, a large number of the profession of that, and other States met in convention at Ramsey's Hall, for the purpose of forming a State Dental Association.

The proceedings of the preliminary meeting were read and acted upon in reference to a permanent organization.

Dr. John F. Johnson, who was president of the preliminary organization, delivered an address on the objects of the Association, (which may be seen on another page,) Dr. G. H. Perine, of N. Y., moved that the chair appoint a committee to arrange order of business; Drs. P. G. C. Hunt, Indianapolis; G. Lupton, Shelbyville; A. M. Moore, Lafayette, were apointed by the chair.

Order of Business.—1. President's address; 2. Reading of the minutes; 3. Presenting Constitution and By-Laws; 4. Election of officers; 5. Election of members; 6. Appointing committees; 7. Reading papers and essays; 8. Reports of committees; 9. Discussions.

Subjects for Discussion.—1. Best means of preserving the teeth; 2. Treatment of exposed nerves; 3. The best means to correct irregularity of the teeth; 4. Mechanical dentistry; 5. Filling teeth; 6. Miscellaneous.

P. G. C. Hunt,
G. Lupton,
A. M. Moore, } Committee.

On motion of Dr. A. M. Moore, Resolved, That a vote of thanks be presented to Dr. Johnston, for his interesting address; with a request of a copy for the Dental journals. Adopted.

Dr. G. C. North moved that a committee of five be appointed to prepare Constitution and By-Laws.

The following were appointed by the chair:

G. C. North, Indianapolis,
P. G. C. Hunt, do
R. H. Hurd, Attica, } Committee.
S. B. Smith, Terre Haute,
G. Lupton, Shelbyville,

On motion of Dr. Satterwite, of Franklin, Resolved, That the Constitution be received and the Committee discharged.

On motion of Dr. P. G. C. Hunt, the Constitution was adopted and the association entitled the Indiana State Dental Association.

CONSTITUTION OF THE INDIANA STATE ASSOCIATION.

Article 1.—This Society shall be known by the name of the Indiana State Dental Association.

Article 2, *Sec.* 1*st.*—The officers of the Society shall consist of a President, three Vice Presidents, a Recording and Corresponding Secretary, Examining Committee of five and Treasurer.

Sec. 2*d.*—The officers shall be elected by ballot, at each annual meeting, and their duties shall be such as appropriately belong to such officers in other deliberative bodies, a majority of votes only shall be necessary to a choice.

Sec. 3*d.*—The association now forming shall be chosen from members of this convention, by ballot, two thirds of all the votes given being necessary to an election.

Sec. 4*th.*—After the formation of this Society, all applicants for membership shall be examined by the examining committee, and whereas, the chief objects in organizing this association, is the elevation of the profession in Indiana, and to promote harmony and concert of action among the *legitimate* thereof, to promote the free interchange of sentiments both written and verbal between members of this association, and to draw a line of distinction between the worthy and unworthy. Therefore, Resolved, that no one shall be eligible to membership unless he possesses a good moral character, a legitimate practice which shall be understood to mean the practice of dentistry to the exclusion of all other callings, neither must he resort to the empirical practice of self-laudation in newspapers, or any other undue means:—this to apply to the reception of members during the formation of this association, as well as afterwards.

Sec. 5th.—All candidates for membership, recommended by the examining committee, shall have (in order to be received as members,) sustained a satisfactory examination on all the branches of Dental Science, and in every other particular, as set forth in Article 4th, provided, however, that those who have Diplomas from a respectable Dental Association may be received without examination by the committee.

Applicants recommended by the committee shall be balloted for; two thirds of the votes given shall be necessary for membership.

Article 6.—Any member may be expelled from the association for immoral conduct, malpractice, or other sufficient cause, on motion of an investigation committee, appointed for that purpose, by a two third vote of all the members present.

Article 7.—This association shall be composed of two classes, viz.:—Acting and honorary members.

Article 8.—Each member at his initiation shall pay into the treasury of the society the sum of $3, and annually thereafter the sum of $2, and all those who shall fail for two successive years, to pay their annual dues, shall forfeit their membership.

Article 9.—No member of this society shall take a student for a shorter period than two years, unless he shall have received instructions previously to equal the term.

Article 10.—The meetings of this society shall be held semi-annually, at such time and place as a majority of the members present at each, may determine.

Article 11.—The association may receive contributions in money, books, or other property, which may be either used or sold in aid of its purposes.

Article 12.—Seven acting members beside the president and chairman shall be necessary for the transaction of business, at the opening of any meeting.

Article 13.—In the event that a quorum can not be obtained at any regular meeting of the association, the time and place on the following year, shall be the same as on the preceding year.

The president shall have the power in case of a failure of any meeting, to call a meeting of the association at any time that he may deem proper.

Article 14.—This Constitution may be amended by a vote of two thirds of the members present at any regular meeting of the association.

On motion of Dr. Perine, the election of officers was proceeded with, which resulted as follows:

The chair appointed as tellers, Drs. G. H. Perine of New York City, John T. Toland, Cincinnati, Ohio.

President.—Dr. J. F. Johnston, Indianapolis.

Vice Presidents.—Drs. J. P. Ulrey, Rising Sun; P. G. C. Hunt, Indianapolis; A. M. Moore, Lafayette.

Recording and Corresponding Secretary.—Dr. G. C. North, Indianapolis.

Treasurer.—Dr. T. M. Nichols, Indianapolis.

Examining Committee.—Drs. H. R. Hurd, Attica; J. Wood, Greensburg; P. G. C. Hunt. Indianapolis; J. P. Ulrey, Rising Sun; S. B. Smith, Terre Haute.

On Motion of Dr. G. Lupton: Resolved, That we admit no dentist to membership in this society, who has not a fixed place of residence, or who is in the habit of moving from place to place, to avoid the responsibility of his quackery, thereby bringing reproach upon the profession, generally. Adopted.

Election of members was next in order, and Constitution signed.

Drs. G. H. Perine, of N. Y. City; J. L. Broffett, Paris, Ohio; John T. Toland, Cincinnati, were voted as honorary members of the association.

On motion by Dr. Hunt, adjourned to meet at 7 o'clock.

Evening Session.—President in the chair. Minutes read and approved.

The Secretary read a letter received from J. Hass, of Lafayette, Indiana.

On Motion of Dr. Perine, the letter was received.

Dr. H. R. Hurd, of Attica, presented the following resolution, which was read and adopted:

Resolved, That the Medical and Dental profession in good standing from abroad be invited to participate in the discussions.

The 1st subject, Best means of preserving the teeth was presented for discussion. Drs. Hunt, Moore, Nichols, Hurd, Smith, Perine, North and others expressed their views.

On motion, adjourned to meet at 10 o'clock, A. M.

SECOND DAY—MORNING SESSION.

Minutes read and approved.

The following resolutions were presented:

By Dr. G. R. North, *Resolved*, That the Treasurer be directed to pay all orders for monies belonging to the Association which are signed by the President and Secretary thereof.

By Dr. Lupton, *Resolved*, That we now consider the time and place for next meeting. Adopted.

Dr. Lupton moved, That when we adjourn, we adjourn to meet at Shelbyville, Ind.

Dr. Hunt moved to amend it by substituting Indianapolis.

Dr. North moved, that the resolution be laid on the table. Carried.

Dr. North offered the following, which was adopted: Resolved, that the clause in the Constitution be altered from semi-annual to annual meeting.

On motion, it was unanimously resolvod, that when we adjourn, we adjourn to meet in Indianapolis, Ind., on the first Tuesday of January, 1860.

Dr. G. H. Perine of New York, presented the following resolutions of condolence on the death of Dr. Elisha Townsend of the Philadelphia Dental College, which were unanimously adopted.

Whereas, It has pleased an all-wise Providence to remove from among us our much esteemed, and highly honored fellow member, Dr. Elisha Townsend, Be it therefore

Resolved, That it was with sincere and painful regret that we received information of the death of this worthy member and shining luminary of our profession—whose talents and learning, and devotion to science; and whose sincerity, and unselfish liberality endered him to all hearts. He was ever foremost in promulgating truth and exposing error. His whole life was a scientific and Christian sacrifice for the adornment of his profession, and his fellow men, and the absence of his aid and counsel will make a void not easily filled.

Resolved, That we sympathise with heartfelt sorrow with the family and friends in their affliction, and unite in offering to his memory that tribute of admiration and respect which is due to exalted genius, and devotion to science for the benefit of his fellow men, and the elevation of the profession to which he belonged and loved.

Resolved, That the Secretary be instructed to send a copy of these resolution to the bereaved family, and the Dental Journals for publication.

Treatment of exposed nerves being the next subject in order, a paper was read by the President from Dr. W. H. Shadoan, of Rockport (which see another page), which was afterward discussed by Drs. Smith of Terre Haute, Hunt of Indianapolis, Hood of Greensburg, Lupton of Shelbyville, Satterwite of Franklin, Moore of Lafayette, and Baraffett of New Paris, Ohio.

After the discussion closed, on motion by Dr. North, Resolved, That a committee of three be appointed to prepare the order of business for the next meeting, and furnish copy early to the Dental Journals for publication, and recommend that the profession come fully prepared.

Drs. J. P. Ulrey, Rising Sun; A. M. Moore, Lafayette, and W. R. Webster were appinted.

By Dr. Lupton, Resolved, That a committee consisting of three be appointed to draft and present a Fee Bill for adoption.

Committee—Drs. G. Lupton, Shelbyville; R. H. Hurd, Attica; T. M. Nichols, Indianapolis.

The third subject was now presented for discussion, "The best means of correcting irregulartity of the teeth."

The subject was discussed at some length, by Drs. Moore, Dills, Johnston, Hood and others.

On motion, the subject closed, and the fourth subject—Mechanical Dentistry was taken up and discussed by Drs. Satterwite, Perine, Hunt, Moore, Johnston, Hood, Nichols and others.

On motion, adjourned to meet at two o'clock.

Afternoon Session.—On motion of Dr. Smith, the reading of the minutes be dispensed with. Adopted.

The last subject under discussion was continued, by request of Dr. Hunt; it was resumed by Dr. Perine, of New York, and discussion continued by Dr. Hurd and others.

A letter was read from Dr. Shadrun, regretting his inability to be present, and promising future co-operation. On motion the letter be received and placed on file.

Subject 5th—Filling Teeth was then taken taken up and discussed by Drs. Hunt, Satterwite, Perine and others.

On motion of Dr. Hunt, adjourned to meet at 7 o'clock, to discuss miscellaneous matters. Adopted.

EVENING SESSION.—Association met pursuant to adjournment. Minutes of preceding meeting read and approved.

Dr. Lupton, chairman of the committee, on Fee Bill, read report.

On motion, report was received and committee discharged.

Dr. Hunt, moved to take up Fee Bill, examine item by item, modify, reject, adopt, and recommend as a whole to the next meeting of the association.

As follows—adopted.

Full set of Teeth on Gold or Platina	$100 to $150
One Tooth, on Gold Atmospheric pressure	10 " 12
Two Teeth, " " "	12 " 25
One Tooth, " With Clasps	8 " 10
Two Teeth, " " "	10 " 12
Three Teeth, " " "	15 " 18
Four to ten " " "	$4 to $6 per tooth.
Obturator	50 " 100
Filling Molar Tooth (Fang included)	12 " 25
" Incisor or Bicuspid "	6 " 15
All other filling	2 " 10
Extracting teeth in office (each)	50 cts. to $1
Visit extracting or advice	1 to 5
Administering Chloroform	2 to 15

On motion of Dr. Hunt, adjourned to meet at 7 o'clock, to take up miscellaneous business.

Miscellaneous subjects being now in order, were discussed by Drs. Hunt, Nichols, Johnston, Smith, Perine and others —interesting cases and specimens were presented.

On motion of Dr. Hunt, association adjourned to meet on the first Tuesday in January, in the city of Indianapolis, Ind., 1860.

Pursuant to previous invitation, (extended to the entire association) upon the adjournment of the association, some fifteen or sixteen of the Dental, with several friends of the medical profession, repaired to the residence of Dr. J. F. Johnston, (our worthy President) to partake of his hospitalities.

At 9 o'clock, all sat down to a table most bountifully supplied with all the delicacies which could tempt the palate, and to witness the performance would convince an observer that—however self-denying in other respects, in this case, they could not resist temptation.

After partaking of the good things set before us, the President, Dr. Johnston, made a neat and pointed address, expressing his pleasure in meeting the profession in convention in Indianapolis, particulorly in meeting them at the same board, under his own roof.

The following sentiments were presented by Dr. Perine:

The Medical and Dental professions. In union is strength; may they ever be equal to the most obstinate *molar*, and in unity as beautiful as the most perfect *Continuous Gum.*

Responded to by Dr. Parvin, of Indianapolis, who spoke of the relationship of the professions, and the necessity of the same for the general good of mankind.

By Dr. LUPTON—The Medical profession, may they always be ("Wright.")

Dr. WRIGHT, of Indianapolis, responded and gave the following: The Dentist, a Scarecrow, used by indulgent mammas, to frighten unruly children.

Beautifully responded to by Ladies present.

By Dr. NORTH—Our hostess. May she live to receive the reward for her present kindness in the memory of the profession, when the present members have given way to a more permanent Set.

Responded to by Mrs. J. F. Johnston, expressing herself delighted.

By Dr. HUNT—The Dental Reporter, may he soon be able to report her.

TOLAND, responded as follows:

Though too modest to attempt to do justice in behalf of our amiable hostess, and not a ladies' man; still having been called upon, I deem it imperative to serve. Actions are but the reflex of the mind and heart. From brief acquaintance and observation of her kindness and hospitality, I feel warranted in the assertion that Mrs. Johnston seeks no greater happiness than what is afforded by the appearance of enjoyment she has been enabled to afford her guests now present. Generosity and liberality are the twin sisters of that noblest quality—"mercy"—which as the poet describes it,—"Falleth as the gentle dews of Heaven, upon the place beneath, it is twice blessed, it blesseth him who gives and him who takes; 'tis mightiest in the mightiest." May the organization of the present meeting of the Profession receive cultivation to insure the full and perfect development of an arch, which may permanently bind together succeeding generations of Dentists to their scientific elevation, and the alleviation of all the ills to which the Dental organism is subject.

Dr. MOORE—While we are favored with a (Hunt,) may we often meet with a Hurd.

Dr. HURD—May the herd of Dentists ever enjoy themselves as we do now.

By Dr. JOHNSTON—Our Brethren at the East.

Dr. PERINE being called up, responded as follows:

Mr. President—It is with pleasure as well as with diffidence, that I respond. It is with pleasure, Mr. President, that I look upon the faces of those with whom agreeable reminiscences are associated. Pleasant to meet where many of us for the first time meet each other—pleasant to see the members of our profession, and it is pleasant to be among you, to form new and renew old acquaintances, and to bring to recollection days gone by.

It is by the co-operation of such of my professional brethren as I see before me and through the association of the press and our schools, the good influence has spread over the length and breadth of the land, from the Shores of the Atlantic to the Coasts of the Pacific its influence has telegraphed its way. Our Institutions founded by such skill and reared by such labor must endure. Hereafter we may look forward to the increased and steady advancement of our profession: long may the influence be felt in the hearts of the brethren, and when generations shall have passed away, let the representatives of this and other similar Associations unite in their Yearly Anniversaries as we do to-day, ever improving and improved.

At a late hour all retired delighted and satisfied with the entertainment, as well as the labors and achievements of the association, a more cordial and enthusiastic spirit seemed to pervade (all feeling that it was good to be here), determined to push forward the objects of the association with a hearty good will.

ADDRESS OF DR. J. F. JOHNSTON.

GENTLEMEN: As chairman of the preliminary meeting, which adjourned as you have heard to meet here to-day, it is made my duty to call this body to order, and preside over it until the regular officers are elected. I must ask your kind indulgence however, for the many errors I shall undoubtedly commit even during my very brief term of office, for I am mainly unaccustomed to such duties. I have also been requested to make a few remarks with reference to our undertaking. This, gentlemen, it would almost be needless to tell you, I am *entirely* unaccustomed to. I am a Dentist, and *not a talking man*, I therefore indulge the hope, that you will not expect much of me, and will bear kindly with my imperfections.

It gives me great pleasure to see as many of the profession in attendance on this their first general meeting, that I am aware of that ever took place in the State of Indiana, as are here to-day. I trust it will be far from being the last time that we shall have the pleasure of meeting each other under similar circumstances. And now, allow me on the part of those Dentists in this city, who have felt an interest in this movement to bid you a cordial and hearty welcome! Gentlemen, we are *glad* to see you. The circular which all of you have seen, either copied into the Dental Journals, or in its original form, calling this convention, explains in the main its object. It will be seen that we have met for the purpose of aiding in the accomplishment of a good work, for surely the elevation of our profession, the cultivation of friendship, and good will towards each other, mutual improvement, and the crushing out of empiricism, and as a result of all this to benefit our patients, and indeed, the community at large, may be with all propriety so considered. Then with this in view, should we not enlist with zeal, and use our best talents in so good a cause, will not all then enter into the business of the convention, with kindly feelings, and a determination to contribute what they can, for the general good, and assist heartily in pushing matters forward to a successful and satisfactory completion. It is well known to all of you, that in many of the States of this Union, our professional brethren, have gone energetically to work in the formation of societies, either State or local. The result is as you are aware, not only a pleasant acqaintance with each other, but a decided advancement in professional attainments, the beneficial effects of which even we in Indiana, can not help but acknowledge. For example, look what our professional brethren in Ohio, are doing with their Northern association, their Ohio college association, and more recently the Cincinnati association, as well as the Mississippi Valley association, which always I believe has met in Cincinnati. Gentlemen, they have learned the advantages to be derived from these meetings, and consequently like sensible men they keep them up. But we have said nothing of the New York, Pennsylvania, Michigan, Illinois, and other societies, which are "all alive," and making themselves useful. Should we then in Indiana, who you see are almost surrounded by institutions of this character remain inactive recipients of the benefits they confer, without making any exertions to contribute to the general fund? Or, to speak more plainly, should we remain isolated and selfish, warring upon each other with but one idea, and that a very stale one too—*money*—or should we combine, fraternize, and with our united talents, help to fill the measure of dental science with something of *value* from the land of "Hoosierdom?"

We have many good practical men in Indiana, who if they would but put their shoulder to the wheel, we should not have to wait long "for the wagon," it would soon roll along well loaded with valuable facts, for the profession. It is with a view to bring out such men, promote harmony, improve each other and kick out quackery, that we have ardently desired the formation of this association. I have long entertained this feeling, have indeed been talking of it and advising with a few of my professional friends for the past few years, and on further consultation with a few friends at the American Convention, and afterwards with some of my professional brethren here, it was determined to put "the ball in motion." Gentlemen, you see that ball in motion now, we hope you will all feel bound to give it a push onward. Let us get up the long wished-for perpetual motion that will work the brains and the muscles of all our Dentists in the State to a good purpose. I can very well recollect when dentistry was away "below par," when compared with other professions, all of you must at least have noticed a change for the better each succeeding year you have been in practice. A Dentist to succeed now must be something more than a mere mountebank. To what are we to attribute these improvements? Gentlemen, it is the formation of societies similar to this we have now in view, but more particularly however to the healthy influence of our Dental Colleges and Journals.

Permit me, gentlemen, to digress for a few moments to say a word or so about them. I feel that our Colleges must be sustained and I trust all of you will urge your students to pursue a regular and legitimate course of study.

The formation of these societies will in my opinion eventually do more for our colleges than any thing else. They have a tendency to excite the ambition of the student, he will desire to be even with his neighbors, he will thirst for a thorough knowledge of his profession, and it is not for a moment to be doubted, where he will go to get it. I am well aware that many of our "Stars" in the profession (if you will allow me to use this theatrical phrase), did not have the opportunity of enjoying the advantages of our Dental Schools, many of them, indeed, being in active practice long before they were established. They have succeeded through unwavering perseverance, and their natural talents. Yet no doubt most of those men, if they had had the advantages which are within the reach of students at the present time, would have gladly availed themselves of them, in preference to taking the hard road which they must have had to travel. These very men indeed, appreciating these difficulties, established our colleges. We of this day should ever hold them in kind remembrance for it.

But, gentlemen, we must not forget the benefits received through the medium of our periodicals, which have undoubtedly done more for the dental profession than any other one thing, they being the means by which information in a tangible form has been so widely and thoroughly diffused. They have been the means of raising many, out of "the mire and the clay." To them must be attributed the formation of these societies, and even our colleges; for those pioneers of whom I have been speaking made themselves heard through their instrumentality; in fact, they have placed dentistry where its most ardent friends thirty years ago never even dreamed it would be, viz: on a respectable footing with the other professions. I think it is therefore the duty of each and every one who has the interest of his profession at heart to subscribe and *pay for*, at least one of our standard Dental Journals, and not content himself because he is in the occasional receipt of some advertising medium, that may have a page or two of borrowed matter in it; or if he does so content himself, he must not suppose he is doing his whole duty as a member of a progressive profession like ours. No profession will progress unless its literature is encouraged; on the contrary it will retrograde. We have in ours several good journals, edited with ability, for the good of the *profession*, and not to advertise; they have done, and are yet doing good, are disseminating a vast amount of useful information, and they ought to be liberally and cheerfully supported. The others can take care of themselves. It is unfair to suppose that men of ability can devote their time to the editing of a dental journal, just for the notoriety of the thing or through motives of philanthropy. They eat and wear clothes as other men, and so do their families (and I believe they generally have them, for they seem to believe in the propagation of ideas in every conceivable form.) Then, when we acknowledge, as we must, the benefits they confer, it is easy to see that we ought to give them support.

But seriously, gentlemen, my reasons for calling your attention so particularly to this point, are these: There is such an increase in these advertising periodicals, which are scattered almost gratuitously over the office of every Dentist, that I have felt some alarm that the profession might lose sight of the advantages we derive as a profession, from our standard Journals, (from which, indeed, those others receive the chief part of their mental pabulum,) and withhold their patronage; when of course they would have to wind up, and we should again be left in professional darkness; for I must again repeat, that although a Society of Dentists first led to the publication of the first dental Journal, yet after that journal, and others were in operation, they did more towards the formation of such societies, and the elevation of the profession as a mass, than any thing else. And now, I trust, I shall not be misunderstood as warring upon these journals, that are published by individuals, to extend their own business and interests, they certainly have a most perfect right to advertise in whatever manner may seem to them best. I consequently can have no objection to their publishing these works, but I wish to impress upon the profession the necessity of liberally sustaining those works which are devoted to its interests only—that it may be enabled to keep its present fair position in the eyes of the world, as an honorable profession. So gentlemen, let us lend a helping hand in all these good works, by sustaining our societies, and requiring our students to sustain our colleges, and ourselves support our dental Journals, and you will soon see quackery on the wing to a more congenial climate; for the intelligent dentist gradually but surely educates the community in which he he lives, as to what they may reasonably expect of an accomplished operator. They soon learn that certain things can be successfully done if properly managed, and will consequently not be satisfied with what a quack would be able to accomplish; for in our profession, as all are aware, it is much easier to exhibit our skill, or our *awkwardness and ignorance*, than in most others. Our friends will excuse us if we institute a comparison with them, we being relations in as much as we belong to that ever-increasing family, the Doctors. Now, with them there is a much better chance for a quack than with us, "dead men" you know, "tell no tales." But with us deformed mouths, marred expressions, defective plugs, and broken jaws, tell a great many—they all most emphatically "speak for themselves," and point so unerringly to the quack, that he can not be mistaken. So as I remarked before, let the profession unite for the common good, and humbug dentists will have to improve or vanish. I know of no better way for us to unite, than has already been proposed, by the formation of the Indiana State Dental Association. I therefore hope, we shall be able to congratulate each other upon the successful accomplishment of this object. I can only add, gentlemen, that I ardently desire to see it vigorously sustained, and trust that at our next regular meeting, we shall appear in greater numbers than at the present.

But, gentlemen, I will not occupy the attention of the convention longer, for we have much of general interest to attend to. I have talked about matters that would seem to be foreign from our present subject. I can only apologize by saying, the intention was good. I thank you for your attention.

PAPER READ BY DR. W. H. SHADOAN.

MR. PRESIDENT: I desire, in as brief a manner as practicable, to give my process of the treatment of exposed nerves of the teeth.

We will take, if you please, the first bicuspid of the right side of the superior maxilla. The dentine is decayed so as to leave the nerve exposed but not injured. It seems to be in a healthy state, so far as the indications show.

The first thing to be done is to carefully remove the diseased bone surrounding the nerve, and also all the diseased parts of the tooth in question. After which, I take a shot (a shot which has been kept in a dry place is preferred), beat it out thin, say about No. 30 American plate gage. Cut a piece as large as will cover the nerve, and overlap the dentine sufficiently to form a hold. I then carefully lay the cap so formed, on the nerve, carefully press it to the tooth around the nerve. And then proceed to fill with gold foil. In all such cases I use what I call block filling. My mode of preparing my blocks are by folding my gold so as to make it four double, cut the piece into three strips, one of which is as wide as both the others. I then roll them together very loosely, and cut off my blocks of the smaller roll, and commence by laying one on one side of my cap so as to overlap it about one-eighth of the size of the block, then treat the opposite side in the same way. Then begin on the ends (as we will call them) lay one of your blocks on the posterior part of the cavity, let it lap upon the two former blocks as on the cap, press it sufficiently hard to make it retain its position. Treat the anterior block as the posterior. Then take a block of the larger roll, and lay on the center cavity, and condense slightly. This as you see has formed an arch over the cap, so that the remainder of the process of manipulation will not affect the nerve by pressure. After it is thus far successfully filled you will proceed by filling around the arch. Always pressing at right angles with the bottom of your cavity. By carefully following this rule you will find that your filling will always incline towards the walls of the cavity, and the consequence will be the plug will not want to dislodge itself while you are building it up. Besides, this arch that is formed over the cap assisted by the cap, keeps the nerve from being injured by under pressure. I find that I can make as hard a filling in this way as though the nerve were not exposed.

In case the nerve is diseased your success will depend upon your diagnosis. If nothing but inflammation has set in you can remove that by treating your patient constitutionally. If my patient needs it, I give a cathartic and apply a little creosote, or tannin, [I almost always use tannin, or sulphate of zinc, and in case the tooth is very sore, I will take tannin and morphia in equal parts, and find that it is just as good treatment as I can adopt.

In case the destruction of the nerve is necessary, I accomplish that by the application of metallic arsenic and creosote, which in nine cases out of ten is successful; if it should fail, I then use the potential cautery, such as nitrate of silver, or most generally nitric acid, and in the event of their all failing, I then extract the nerve in toto. I then carefully prepare my nerve cavity, and fill with pure gold, after which I hear no complaint. I find the nerves of teeth diseased when there is no decay in the teeth. In such case I use the drill freely until I have formed a cavity sufficiently large to admit of my operation, then I extract the nerve and syringe the cavity well with creosote, tinct. opii, chloroform and acconite. Then I plug the cavity, and hear no more complaint from that source.

DISCUSSION OF SUBJECTS.

1. *Best means of preserving the Teeth.*—Dr. HUNT said, when the teeth were in a healthy condition he would recommend care, and frequent use of the brush and soap. When teeth are diseased, and require filling, he uses gold, and has been successful with the most simple treatment. With children he would recommend the frequent use of a napkin to create gentle friction.

Dr. MOORE (Lafayette), would prefer to listen to older members on the subject. He advised cleanliness, and thinks much depends on the general health of the patient. Thinks in many cases *caries* is hereditary. In peculiar reddish decay, has found that filling would not arrest it. Is of opinion that teeth decay more rapid during the period of pregnancy.

Dr. NICHOLLS asked, in cases of acid secretions, would it not be proper to correct? It might be done with carb. soda, lime, etc., to improve the glandular system; such cases take time. In relation to *caries,* has only discovered three kinds; white caries being the most difficult to arrest. He related the experience of an old practitioner, who, after removing all decay, cut and drilled away the sound bone beyond decay; and thus had no more difficulty in preserving than other kinds of caries. He recommended the use of a soft brush; a hard brush, he thought would wear the enamel into furrows. Nature would not repair the damage done by a hard brush. Recommended cold water, and no dentifrice. He doubted if caries after occurred but from irregularity—teeth being crowded. Mechanical pressure made the enamel thin between the teeth, which are more liable to decay.

Dr. Hurd (Attica), considered cleanliness of the highest importance, no matter how attained. Related experience with some healthy teeth, well developed; the spaces between the molar teeth admitted lodgment of food, which caused decay, before attention was paid to removal, etc. The next case was that of a child. Gave personal and diligent care to cleansing the desiduous teeth, and filled as decay presented itself; they were at present in good condition, and thinks they have been preserved longer than they otherwise could be. He hoped all would engage to throw light to aid each other to benefit patients.

Dr. Smith (Terre Haute), said, that in considering the subject it was necessary to inquire the cause of decay. He would say, want of perfect cleanliness was one of the causes. He thought when the chemical agents were brought to bear upon the surface of the tooth, in nine out of ten cases the causes are external, or brought about by the influence of acids causing receding of the gum where the tooth is more easily acted upon. He differed from Dr. Nicholls in the use of a brush, but would not use brickbats. Thought the teeth could not be injured by the use of a stiff brush and good dentifrice.

Dr. Hood (Greensburgh), said he was satisfied that caries occurs from other than external causes. He referred to cases on cutting edges, where the orifice was very small, when on opening with the excavator, he was astonished at the extent of decay beneath. He thought it resulted from defect in elements which constitute the teeth, and from deviation from some natural laws.

Dr. Perine (N. Y.), on being called upon, said, he had come like a dry sponge, and expected to absorb much, and he was willing to be squeezed. This subject carried them back to the question: How shall we marry? How shall we rear our children? We must go back to the mother from the moment of conception. He was favorably impressed with the use of phosphate of lime, and earnestly called attention to its administration. If decay occurred the teeth should be promptly filled. Cleanliness, of course, was of the utmost importance.

Dr. NORTH (Indianapolis), concurred with the suggestions made in regard to preservation of the teeth. Some diversity of opinion appears. Dr. Perine adheres to the doctrine of Harris, and he inclined to the same. He was aware that a more modern argument was advocated, viz: that the causes of decay are entirely external. He was not satisfied which; whether external or hereditary. He would like to have the matter determined. Recommended frequent use of brush, even at a very early age.

Dr. NICHOLLS remarked, in reference to decay—large cavities with small orifices—Might it not occur by teeth being worn down, until cold is carried to the pulp? Would not this wearing finally go on until the nerve was destroyed? In such the dry kind of decay is discovered; nature seeks to throw off the dead substance. Dr. Perine, he said, had covered the ground. That diseases of the teeth are in some cases constitutional there can be no doubt.

SECOND DAY—*Morning Session.*

2. *Treatment of exposed Nerves.*—Dr. SMITH remarked on the importance of the subject. He thought a large proportion of teeth coming before them with exposed nerves could be saved.

Dr. NORTH said he had given much attention to the subject. He cleanses the cavity free from all carious matter, guarding the nerve from wound or injury, and uses prepared anodynes, antiseptics, etc., to bring about health to the parts. Next prepares cavity for permanent filling by caps, with confidence; he can not leave too much space under cap. He succeeds in eight cases out of ten.

Dr. HUNT said he would like the subject discussed by question and answer, to elicit the experience of all. He has had poor success in capping exposed nerves; has lost about the proportion saved by Dr. North; prefers to remove if the nerve has been wounded. He inquired of Dr. North, when the nerve had been capped, and the filling removed, if any deposit of bone or dentine was found?

Dr. NORTH said he had not had occasion recently to examine.

Hr. HUNT said he had examined many such cases, and found no osseous deposit when the nerve had been wounded, but frequently the death of the nerve.

Dr. HOOD said he had used a variety of preparations in the treatment of exposed nerve, and a variety of articles for capping nerves—bone, lead, etc. His patients were not willing to pay for the treatment of filling roots. In many cases patients were satisfied for one or two years with nerves capped, but not much longer. Had found no bony deposit under caps when teeth were removed, contrary to expectation, but nerves dead, and frequently slight decay in progress.

Dr. HUNT asked if he treated all patients alike who applied?

Dr. HOOD replied, he discriminated of course. In some cases would not treat; preferred not to do so.

Dr. LUPTON (Shelbyville), thought it important to report failures, as they learned more by them than from success. He had more trouble with young patients, and more failures. He found it difficult in the country to get his patients to visit him promptly. Destroys nerves with arsenic, morphine, etc.

Dr. NORTH had two cases to report of failure. First, nerve capped—was obliged to remove filling; treated, destroyed, and filled fang, successfully. The second was that of a young lady, sixteen years of age. External caries slight. On opening and excavating cavity, found nerve exposed; capped and filled with amalgam; it became painful. He then removed the filling, and found the cap too small, the filling pressing upon the nerve. After treatment recapped and filled, but again failed. He again removed the plug, and destroyed the nerve, and is now preparing to fill the root. He never destroys nerves where he can cap and fill.

Dr. SATTERWHITE (Franklin), asked members what they did when the cavity was so shaped, and the nerve so exposed that it could not be protected by a cap?

Dr. JOHNSTON replied that he had used with much satisfaction Plaster of Paris as a cap, and for such cases thought it would answer a good purpose.

Dr. HURD thought much depended on the health of the patient. He could not treat all cases alike. Has had success, and many failures, in capping nerves. Continues to treat the same, and is not disheartened by failures. He was successful in one-half his cases, and should encourage to greater efforts. He cited some interesting cases.

Dr. SMITH asked what proportion of those cases in which abscess finally occurred could be considered successful?

Dr. HOOD thought if the apparently successful cases of capped nerves were examined, the majority would be found dead.

Dr. NORTH thought that few of those cases were successful; they were generally failures. Uses tannin and creoscte, after using chloroform, with much satisfaction.

Dr. SMITH remarked he did not think vitality could be preserved in every case. In front teeth did not hesitate to treat and cap, but in back teeth trouble generally ensues. For inflamed nerves he uses caustic, etc.

Dr. HURD asked if it would be well to attempt treating a nerve for a patient at a distance?

Dr. SMITH said he would not hesitate.

Dr. HURD did not consider distance an objection. He thought the preservation of a tooth worth several trips of twenty to fifty miles.

Dr. NORTH concurred, but left the matter to the discretion of the patient. He generally acted according to the circumstances of the patient.

Dr. MOORE treated healthy nerves only. Uses chlo. zinc, and treats but few, and those of the most favorable cases. Would not allow an ulcerated tooth to remain in the mouth.

Dr. JOHNSTON thought much of chlo. zinc; though it gave acute pain on application, it lasted but for a moment. He would not remove a filling if the abscess was small, but made an incision over the apex of the root, and treated accordingly, if the root was filled. He thinks the zinc has no equal in cases of inflamed dentine.

Dr. MOORE thought it advisable to fill a root immediately after the removal of the nerve. Uses creosote, morphine, etc.

Dr. BROFFETT (Ohio), here made some beautiful and appropriate remarks on thorough physiological and hygenic education and examinations, adding a physiological dissertation on the subject, and remarks, after which the discussion closed.

3. *The best means to correct irregularity of the Teeth.*—Dr. MOORE thought this a very important subject. Thought the earlier application was made to the Dentist the better. Described a very interesting case.

Dr. Dills said he liked much the inclined plane in many cases, and recommended cheoplastic as a base. He described two interesting cases in which he had used it satisfactorily.

Dr. Johnston, during the reporter's absence, made some interesting remarks on the subject, which were listened to with interest, and presented casts of an interesting and successful case of irregularity.

4. *Mechanical Dentistry.*—Dr. Satterwhite said for full cases he preferred plaster for impressions; for partial, wax without a cup. He takes the female cast first, direct from plaster model, by placing plaster model inverted, within a rim, and pours metal on it.

Dr. Hunt was in the habit of taking male cast first.

Dr. Moore uses a compound of tin, bismuth and lead for the female cast, after a plan recommended by Dr. Allen.

Dr. Perine said that for full cases he preferred plaster; for partial cases he was satisfied with wax impressions. For partial atmospheric cases he has used a cup struck up of zinc plate, using thin sheet wax quite warm. He prefers for those cases if the gums are healthy and hard, a cut chamber, or, in other words, a double plate; making the chamber only the thickness of the plate. For full dentures he prefers the continuous gum; has used the continuous gum blocks for partial cases with satisfaction. For full dentures, the continuous gum and the rubber were the principal kinds used in New York. He used in some cases partial blocks on gold plate with satisfaction.

Dr. Johnston said he had been using the cut chamber satisfactorily; could not say if it was Cleveland's, Gilbert's, or whose it was; it was the same principle as described by Dr. Fuller at the Convention in Cincinnati.

Dr. Hood had tried many plans, and thought best in no case to let the plate touch the natural teeth.

Dr. Nicholls said he regulated the size and depth of cavity plates according to circumstances.

Dr. Hunt said he also used the cut chamber. First received the idea from Dr. W. H. Hunter, of Cincinnati, who uses double plates; the chamber formed by cutting a hole out of the inside plates, and filling the space between the two plates with continuous gum material.

Afternoon Session.—On call of Dr. Hunt,

Dr. Perine made some remarks on cheoplasty. He said where he came from "the game was played out;" few used it, except for temporary purposes. If he were to use any metal more base than silver, he would prefer pure tin, as recommended by Dr. Geo. E. Hawes some years since, who had been robbed of the credit to which he was entitled. He further said he had seen the work in many mouths, which in some was much discolored and corroded, and in others clean and bright.

Dr. HURD remarked he thought at one time he would try it; he called at the New York Teeth Manufacturing Company to test the matter; offered $20 for the privilege to test it, and if it did not come up to representations the money to be refunded, which was refused; called upon Dr. McDonnell, who thought it was not fully tested, and expected improvements. He said he had not used it, and he did not think he should. Did not like the course pursued with it. Did not like patents in the profession any how.

5. *Filling Teeth.*—Dr. HUNT wished to hear from those who had used adhesive gold foil.

Dr. SATTERWHITE said he had used crystal gold foil, and liked it much; but thought not so much could be put in a cavity.

Dr. PERINE said he was a "blab," especially when a subject was presented which he had made a "hobby," as he had in the use of crystal foil for filling teeth. He said the first thing with him was to make his patients think he was "some punkins" of a Dentist, and he was vain enough to think there were those in New York that though he was "some." He selects a central incisor, and illustrates his operation on the President, as his patient. He first treats the tooth, which he finds considerably diseased; injects the root freely with creosote, and uses nitrate of silver; takes sufficient time in treating, which, when done, two out of three, he thinks, can be saved. Fills root with non-adhesive gold foil rolled into cylinders on fine broach; carried on the broach to apex of root; then with small untempered instruments made for the purpose, after the fashion of the whalebone plugger used by Dr. J. S. Clark, proceeds as he illustrated by cut in the *New York Dental Journal.* Sometimes fills upper roots with Plaster of Paris, injected in the root, absorbing and drying the moisture with bibulous paper and a jet of warm air thrown upon it. If the tooth becomes inflamed, treats with creosote; sometimes applies a leech. When nerve is exposed accidently, prefers to treat mechanically, when he can get the patient to submit.

EVENING SESSION.—Miscellaneous matters were discussed with much interest.

Dr. JOHNSTON exhibited an interesting case of irregularity.

Dr. PERINE presented a beautiful case of continuous gum teeth after the style of work of Dr. B. Franklin, New York.

Dr. SMITH exhibited an interesting specimen where exostosis had been developed.

Dr. HUNT related interesting cases of ossification, his treatment and success.

Dr. NICHOLLS related cases of neuralgia, his treatment and successful results.

Dr. TOLAND presented a neat specimen of vulcanized rubber partial case. He stated that the work was about being introduced into Cincinnati.

MINUTES OF THE OHIO DENTAL COLLEGE ASSOCIATION.

The association met according to adjournment, in the Dental College, Monday, 2 o'clock, Feb. 21st, 1859.

Present—Drs. J. Taylor, G. Watt, C. Bonsall, C. B. Chapman, J. Richardson, J. T. Toland, J. Taft, and fourteen others by proxy.

The meeting was called to order by the President, Dr. Chas. Bonsall, who made some very appropriate remarks, in regard to the condition of the institution, especially with reference to the session just closing.

Some general conference was held in regard to the condition of the institution.

Adjourned to meet at 3 o'clock, P. M., to-morrow.

SECOND DAY.

Association met according to adjournment, at 3 o'clock, P. M., President in the chair. Minutes of the previous meeting were read and approved. The Treasurer presented his report, which after being audited by the committee, was accepted.

Report of the Treasurer.

The Treasurer of the Ohio Dental College Association, would respectfully report that the floating debt of $251,40, as reported at our last annual meeting, stands now as follows:

The amount due J. G. Douglas, at that time, has been reloaned by the same gentleman, and the association is in debt to the same, on 6th of March next, principal and interest	$282,65
Amount due the Treasurer on bills paid up to the present time	13,21
Amout of floating debt	$295,86
The amount in the Treasurer's hands at our last meeting, $47,30, to this $3 should be added, inaccurately footed up in our last report, making in the Treasurer's hands	$ 50,30
Interest on the above, and deducting amount due the Treas.	2,22
Interest on $150 in the Treasurer's hands from 1st March to 1st July	3,00
	55,52
Deduct amount due Treasurer	13,21
	$ 42,31

Leaving forty-two dollars and thirty-one cents to be paid on note due Douglass.

1859, Jan. 1st, By cash of the Dean of the Faculty	$150,00
Feb. 20th, " " " " "	50,00
	$200,00
Interest of H. A. Smith	6,00
	$206,00
Cr. Jan. 1st, Paid interest notes	150,00
Feb. 20th, " " "	50,00
	$200,00

The interest notes on the mortgages have been duly paid

JAS. TAYLOR, *Treasurer.*

Drs. W. W. Allport, of Chicago, Ill.; Edgar Taylor, Palmyra, Mo.; Eli Collins, Connersville, Ind.; B. B. Ward, Mobile, Ala.; D. W. Perkins, Milwaukee, Wis.; I. B. Branch, Galena, Ill.; J. M. Lewis, Marion, Ill., having become stockholders, were unanimously elected members of the association.

The Dean of the faculty read the following report:

Report of the Faculty.

The Faculty of the Ohio Dental College, would respectfully submit the following report:

There has been no change in the Faculty during the last year, and we are happy to express the hope, that it will remain as at present.

Dr. H. A. Smith has filled the position as Demonstrator of Operative and Mechanical Dentistry, with commendable zeal, and to the entire satisfaction of all parties concerned; and we entertain the expectation that he will remain with us during the next session. The infirmary has been kept open during the past summer. The person placed in charge of it, remained only part of the summer; when he left, another was placed in charge. Throughout it was conducted to the entire satisfaction of those having control. The proceeds of the Infirmary were used for the improvement of the rooms connected with it. The Infirmary will probably not be kept open during the coming summer, owing to the pressing calls from abroad for the graduates. A preliminary course was commenced on the 18th of October, and the regular course on the first Monday of November.

We are happy to report an increase of the class over that of last session; numbering twenty-three. The character of the class is such that we are pleased to congratulate the institution therefor.

There are nine members of the graduating class, all of whom have complied perfectly with the requisitions of the institution.

Names of Graduates.—L. B. Hatch, Indiana; J. B. Doughtry, Mississippi; J. Ingalls, Wisconsin; J. B. Knisley, Ill.; G. B. Lenoir, Miss.; W. B. Ward, Ala.; E. Ruth, Ky.; O. Wilson, Ill.; S. Wardle, Ohio.

The following table embraces a list of the Infirmary operations during the sesion:

Pivot Teeth	10
Pieces Repaired	16
Cases of Irregularity treated	3
No. of Gold fillings	255
Fillings of other material	67
Teeth Extracted	368
Cases of Salivary Calculus treated	30
Full Upper Sets of Continuous Gum Teeth	3
Full Upper Sets Specimens, " "	2
Partial Sets " " "	3
Full Set Cleoplasty, Practical	1
Under Sets " "	2
Under Sets Silver and Gold	6
Full Sets in Brass, Specimens	8
Full Upper Sets in Silver and Gold, practical	9
Partial Sets " " "	8

Full Set Block Work, Specimen	1
Partial Sets " Practical	2
Nerves destroyed	10
Fangs filled	18
Cases of Alveolar Abcess treated	13

J. Taft, *Dean.*

On motion, the association went into an election of officers, for the ensuing year.

President, -	Dr. CHAS. BONSALL.
1st Vice President	" W, R. Webster.
2d " "	" W. W. Allport.
Secretary, -	" J. Taft.
Treasurer, - -	" J. Taylor.

Dental Examiners—Drs. B. F. Maguire, New York City; J. F. Johnston, Indianapolis, Ind.; Dr. Dudley, Louisville, Ky.

Medical Examiners—Drs. B. F. Richardson, Cincinnati, Ohio; A. B. Butler, Richmond, Ind.

After some farther informal conference, the association adjourned to meet on Monday, 2 o'clock, P. M., Feb. 20 1860.

J. Taft, *Secy.*

FIFTEENTH ANNUAL MEETING OF THE MISS. VALLEY ASSOCIATION OF DENTAL SURGEONS.

MINUTES.

The Association met according to adjournment, in the lecture room of the Ohio Dental College, Feb. 23, 1859.

Members present: James Taylor, Charles Bonsall, J. P. Ulrey, J. Taft, W. R. Webster, Joseph Richardson, H. A. Smith, Eli Collins, H. R. Smith, Geo. W. Keely, and Geo. Watt.

The President, W. R. Webster, in the chair. The minutes of the last meeting were read, and the roll of the members called.

Dr. C. Bonsall presented a paper from Dr. E. Osmond, resigning his membership; and as Dr. O. had paid to the Treasurer all dues to the association, his resignation was, on motion of Dr. Watt, unanimously accepted. The Treasurer, Dr. C. Bonsall, resported as follows:

Chas. Bonsall, Treasurer, in account with the M. V. A. of Dental Surgeons.

Dr. 1858, Feb. 17, To Balance in the Treasury	$120,00
1859, Feb. 23, To initiation fees and dues rec'd since	53,00
	$173,00
Cr. 1859, Feb. 19, By Cash paid Janitor	$ 5,00
" " Dr. Watt for reporting	15,00
Both of the above by order of the Association.	
By balance in Treasurer's hands	$153,00
	$173,00

Drs. Ulrey and Richardson were appointed a committee to audit the above, who reported as follows:

The auditing committee having examined the Treasurer's account, find the same correct.

Joseph Richardson,
J. P. Ulrey, } Committee.

The Chair appointed Drs. Chas. Bonsall and H. A. Smith to fill the vacancies in the committee on membership, occasioned by the absence of Drs. E. Osmond and A. G. Stipher.

The Executive Committee presented the following report:

The Executive Committee would respectfully report the following programme for the order of business:

I. Reports of Officers.

II. Reports of Committees.

III. Reading of Essays.

IV. Election of Officers to take place at 2 o'clock P. M., Thursday.

V. Miscellaneous business, including the following subjects for discussion:

1. Treatment of Inflamed or sensitive denture.
2. Mechanical dentistry.
3. Treatment of dental periostitus and alveolar abscess.
4. To what extent are atmospheric plate's applicable to partial sets of teeth.
6. Anæsthetic agents, use of, in the extraction of teeth.
7. Filling Teeth.
8. Best means to secure a good denture.

J. P. Ulrey,
H. A. Smith, } Committee.
C. N. Woodward,

On motion, adjourned to meet at 2 o'clock, P. M.

FIRST DAY—AFTERNOON SESSION.

Met according to adjournment. Minutes read and approved.

The Committee on Irregularities being called on to report, the chairman stated that they had given the subject some attention, but were not prepared to report. Excused, by consent.

The Committee on Dental Progress obtained leave to report to-morrow, and also the Committee on the prize essay.

On motion of Dr. Watt, all members of the medical and dental professions present were invited to participate in the discussions.

Proceeded to the discussion of Miscellaneous subjects. No. 1 was taken up; and pending its discussion, adjourned to meet at 9, A. M., to-morrow.

SECOND DAY—MORNING SESSION.

Met according to adjournment. The President in the chair. Minutes of last session read and approved. No. 2 of Miscellaneous sujects was taken up.

On motion of Dr. Taft, the Constitution was amended, by a unanimous vote, so as to reduce the initiation fee to THREE DOLLARS and the annual dues to ONE DOLLAR.

The Committee on Dental Progress was instructed to report at 3, P. M., to-day.

The Committee on Membership presented the names of the following persons as candidates for admission to the Association:

Drs. S. F. Compton, Hillsborough, Ohio; Samuel Wardle, Cincinnati, Ohio; J. M. Lewis, Marion, Ill.; L. B. Hatch, Muncie, Ind.; B. B. Ward, Mobile, Ala.; C. H. James, Cincinnati, Ohio; S. B. Smith, Terre Haute, Ind.; J. B. Lindsey, Maysville, Ky.; all of whom were unanimously elected.

On motion of Dr. Taft, 3½, P. M., was set apart, for demonstrating the method of manipulations and "packing" the "coralite base" for artificial teeth.

On motion, adjourned to meet at 2 P. M.

SECOND DAY—AFTERNOON SESSION.

Met according to adjournment. Minutes read and adopted. Proceeded to the election of officers, which resulted as follows:

President, GEO. W. KEELY.
Vice President, H. R. SMITH.
Corresponding Secretary, JOSEPH RICHARDSON.

Recording Secretary, GEO. WATT.
Treasurer, CHAS. BONSALL.
Executive Committee, H. A. SMITH, E. COLLINS, L. B. HATCH.
Committee on Membership, S. WARDLE, J. P. ULREY, J. TAFT.
Committee on Dental Progress, H. A. SMITH, W. R. WEBSTER, GEO. WATT.
Committee on Irregularity, H. R. SMITH, J. TAYLOR, CHAS. BONSALL.

The Committee on Dental Progress presented their report which was read and accepted. (See page 310 of the present number of the *Register*.")

It being necessary for the President to leave the city, and the President elect being absent, the Vice President elect was called to the chair.

The method of "packing" the "coralite base" was thoroughly demonstrated by J. T. Toland and his assistants. This base is the vulcanized gutta percha. The thanks of the Association were, on motion, returned to Mr. Toland and assistants for their instruction in the above process.

On motion, adjourned till 9, A. M., to-morrow.

THIRD DAY—MORNING SESSION.

Minutes read and approved. Dr. Taft exhibited a practical case of "coralite base," which had been worn a few weeks with great satisfaction; a silver set having previously failed in the same mouth.

Mr. Toland exhibted the pieces which were "packed" in the presence of the Association yesterday, now vulcanized.

No. 3, of Miscellaneous subjects, was taken up; and, during its discussion, Dr. C. Bonsall, by consent, introduced an interesting case of irregularity which had been under treatment in the College Infirmary during the session. All seemed highly pleased with the appliances in use, and with the result of the treatment thus far.

By request, Mr. Toland described the various manipulations used in preparing work for vulcanizing.

Adjourned till 2, P. M.

THIRD DAY—AFTERNOON SESSION.

Met according to adjournment. G. W. Keely, the President elect, in the chair.

No. 5, Miscellaneous subjects, was discussed, and Nos. 6, 7 and 8 were postponed, No. 4 having been, by consent, considered in connection with No. 2.

On Motion of Dr. Bonsall, the Treasurer was instructed to pay to Geo. Watt $15 for reporting the discussions, and $8 to the janitor for his services during the meeting.

On motion, adjourned to meet in the Dental College, February 21st, 1860, at 10 o'clock, A. M.

REPORT ON DENTAL PROGRESS.

TO THE MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

Gentlemen:—The committee to whom was assigned the duty to prepare a report on the Progress of Dental science at your last meeting, feel that it is difficult to exactly trace how much of real advancement has been made during the past year. It would be an easy task, in comparison, to trace the progress of dentistry from the earliest period when it had a name to the present time; how it has progressed from a mere trade to a distinct branch of surgery. Cultivated by no class of practitioners exclusively; how its history has been marked all along by the discovery of principles, and the application of those principles to this department of science.

These developments have been slow, as they should be—and it would be impossible to fix the precise time or even approximate to it—when many of the most important truths and principles were first established and applied to dentistry. So in the past year, while we know substantial progress has been made, by the comparison of the profession now with the profession of one year ago—still it is difficult to enumerate all that has contributed to that end. We think much progress has been made; though nearly all that has been attained, perhaps, has been in the department pertaining more especially to the art of dentistry, than in what may be stricly termed its science.

The science of dentistry differs from its art in this: that *science* is the arrangement and explanation of the principles, so far as they have been discovered, as the basis of this department of knowledge; while *art* is the application of these scientific principles. The art of dentistry is the end and object of its science, and the science of dentistry the foundation of its art. Progress in the former must necessarily be slow; while in the latter—especially in our day, when invention is so striking a characteristic of the times—it must advance with rapidity. For while the few are investigating, many are ready to apply the results of these investigations.

In attempting to enumerate the different departments in which most progress has been made the past year, we naturally refer to Dental Colleges or Dental Education first:—because it is the ground work on which the future practitioner must base his hope of excellence or progress in the profession. And we are reminded to speak of Dental Colleges from the fact we are convened and have from year to year met together, through the courtesy of the Ohio Dental College Association, in a building specially set apart for the purposes of Dental education alone. While we can not report that increase in the number of students in attendance at our several Dental Colleges we had hoped, still it is gratifying to know that the classes number more than the year previous, notwithstanding the financial troubles with which the country has been struggling for a year or more past. Without making an appeal for Dental Colleges, in attempting to instruct the profession in their duty to sustain them, we will be permitted to say—that practitioners could do much for these institutions, much they are not doing, by directing the attention of their students to the importance of a thorough training in the departments usually taught in our Colleges, before entering upon practice. There are but few students who would not complete a course at some Dental College, if preceptors would urge its utility upon them. We fear the public have a more just appreciation of efforts for improvement in this direction than many of our own profession. And it is an evidence that dental science is progressing, and being elevated to that high and honorable position which we all desire it to attain; when we observe an enlightened public sustaining and encouraging those who are willing to make sacrifices to perfect themselves in order the more thoroughly to practice their profession. The public are beginning to demand the assurance that the dentist is qualified by a thorough early preparation before they are willing to submit themselves to his hands. In our efforts then to elevate our profession, let our Dental Colleges be a portion, at least, of our care.

The movement made in England some three years since to establish a Colllege of Dentistry, has been delayed until recently, because of a want of harmony among those most interested in the enterprise. These dissentions, fortunately for the cause of dental science, have been harmonized, and a Dental College has been successfully established, and a course of lectures are now being delivered by competent men in the profession.

By an act of the British Parliament, passed in August last, entitled "The Medical Act"—the Dental profession has been recognized by providing that it shall be lawful to issue certificates of fitness to practice dentistry to those who may apply, after having passed an examination testing their qualifications for that purpose. This recognition it is thought will tend to advance the cause in Great Britain; and there is a possibility to obtain a special act for its regulation, at no distant day.

A new edition of the Principles and Practice of Dental Surgery, by Chapin A. Harris, has been recently issued. This edition is enlarged and improved by incorporating all that is new since the last publication. This is the only issue in the way of text books your committee are aware of. In this connection we would suggest to any who are competent, the propriety of devoting themselves to the preparation of suitable text books for the use of students. There is a need of works of this kind which has been greatly felt. We have several excellent standard works of this character. Most of them, however, are too general—embracing too much to be of the most practical benefit to the student. We should have works devoted exclusively to each speciality or department in dental science. Several works of this nature are in contemplation we are informed. Their early completion is certainly to be desired.

To the list of journals enumerated in the report submitted last year, the *New York Dental Journal* may be added. We have now five journals devoted exclusively to dental science. No better evidence of progress in any science can be given than the existence of a sufficient number of ably conducted periodical journals, devoted to that special department. The efforts of those in charge of our journals to publish faithful reports of meetings of the various societies, and the high tone and practical bearing of the contributions generally, should commend them to our hearty support. In England two dental journals are now published; both of them ably conducted and well sustained.

The stated meetings of the various dental associations, have been held regularly the past year, and quite numerously attended. The published reports of discussions of these meetings, indicate an improvement in the practical bearing of remarks, and members appear to have more thoroughly investigated the various subjects brought before these meetings. The subjects for debate, are more definitely stated, affording members opportunity to study and arrange their remarks before the subject is brought before them. A number of able papers have been read before several of these societies during the last year, forming valuable contributions to dental literature.

Three new societies have been organized the past year, viz: The North Western Society, Cincinnati Dental Association and the Indiana State Dental Association. The advantages attending the establishment of associations of this kind, both to the individual members and to the general cause of the science will be conceded by all. Meeting in this manner we learn to measure ourselves with impartiality with others in the profession. By comparing our own productions and results with those of others, we learn wherein we or they enjoy greatest facilities for their execution. It is by such comparisons we readily detect our own mistakes in contrast with the excellencies of others, and the more readily detect points wherein we correctly differ: while we also enlarge our knowledge of the subject engaging our attention. Many ideas advanced in these discussion may not be new, but by having been presented in a manner different from that to which we have been accustomed, necessarily caused us to investigate the subject further, and the result can not but be advantageous to ourselves.

In Mechanical Dentistry a steady advancement is its characteristic feature. Constantly something new is being introduced, both in material and the manner of its application in artificial work. The older methods are being modified and improved, so that much better results are produced than formerly. More attention also is now being given to what may be termed the *artistic* in mechanical dentistry. A due regard for the usefulness of artificial dentures deserves our first care. Still the other and higher object, perhaps, that of the attainment of the beautiful or natural expression of the piece to be worn, should not be disregarded. The mere exercise of the acquired habits of manipulation in producing a set of artificial teeth, is what makes Mechanical Dentistry, *Mechanical*, while it is the manual effort to produce the beautiful which elevates with the *dignity* of *an art.* The merely mechanical will be compelled to keep pace with the *artistic*, if the latter be sufficiently cultivated.

Of the various methods of mounting artificial teeth, that known as Allen's Continuous Gum Work, affords better facilities, doubtless, and a wider range for the exercise of this faculty, than any other style of work. Such progress has been made in the development of this style of work, since its first introduction, that little room appears to be left for its improvement. The past year's experience in this method, confirms the opinions formerly expressed of its durability.

Cheoplasty is being used to a considerable extent at present. The testimony of those who are using this method in their practice is generally favorable we believe Sufficient time has not elapsed since its introduction to warrant us in recommending it unreservedly to the profession. It has some of the advantages doubtless, claimed for it over other kinds of work.

Another method has recently been patented by a member of the profession, in Pittsburg. The manipulation is very much the same; it differing from the Cheoplastic process only, in the composition of the metal, if we are correctly informed.

The process of vulcanizing rubber and gutta percha as a base for artificial teeth, which has been practiced to some extent in some of the eastern cities for the past three years, has been recently introduced into the west. The testimony of those using it is favorable. Some of the advantages claimed for it may be briefly stated. The adaptation is perfect. The plate of gutta percha, is moulded to the model, and thus vulcanized. In this process there is neither expansion nor contraction : hence the fit must be perfect. It must necessarily be more perfect in this respect than any swaged plate can be. The strength of the piece is quite sufficient for the requirements of dental substitutes, when properly prepared. The weight is much less than any metallic work can be, which in many cases is quite a desideratum. It is as easily kept clean as any other kind of work: there is no interstices for the lodgment of foreign substances. It is retained in the mouth without any of the unpleasant feeling experienced with wearing metallic plates, and upon the acclusion of the jaws, the teeth come together with more nearly the same sensation as the natural organs. It is claimed that it is sufficiently indistructable as a base for artificial teeth. Enough time has not elapsed since its introduction to test it in this respect. In color it is objectionable when exposed to view in the mouth. Efforts are being made to improve in this respect, which we hope will be successful. In all cases it will be thicker and more clumsy in the mouth than ordinary gold work, although not more so, perhaps, than continuous gum work. This, in some cases, would be objectionable, in others it would not. The work when new has a slight oder, which soon passes off after being worn. There is no taste from the time of its first introduction in the mouth. From observations made we do not think it will absorb the secretions of the mouth. Our experience with this method of mounting artificial teeth has not been sufficient to warrant us in giving it a commendation. We would in this connection suggest to all inquirers to test it thoroughly, and report the result of their observations.

We have been informed within a few days of a process which will soon be made known to the profession, in which the teeth may be attached to the main plate with gold or silver of any desired fineness, without soldering and make much neater work. Either plain or gum teeth can be used, it is stated. Not having seen any of this style of work we can only refer to it.

In Operative Dentistry much real progress has been attained during the past year. It consists in the improvement and perfecting of former methods, rather than in the introduction of new methods of practice. More attention is now given to the pathological condition of the teeth, and diseases of these organs are more successfully treated than formerly. By this attention to the pathology and proper treatment, many teeth are now improved and made useful, that would have been sacrificed with the older course of practice. This is especially the province of the dentist, and nothing will commend the profession so favorably to the public, perhaps, as the successful treatment and preservation of these natural organs. In this department there appears to be a generous spirit of emulation among the profession, to produce the most perfect operations as well as to preserve the greatest number of teeth that are diseased. The destruction of the nerve, when the preservation of the tooth with it in a living condition is impracticable, has been quite extensively practiced the past year. This method of practice has been successful in the greater proportion of those cases, where sufficient care has been exercised in the treatment, before the final introduction of the filling. Operators require their patients to make repeated calls if necessary, and patients submit to the necessary sacrifice of time, more readily than formerly.

In the operation of filling teeth greater attention is now given to every particular that will in any degree aid in producing a perfect operation. The restoration of the shape of the teeth is also an object, where portions of them are broken away; giving them a more sightly appearance, and making them answer more nearly the purpose of the natural organs in their original condition. As a result of this care to produce the best operations, more attention is directed to the preparation of material used in filling teeth. No manufacturer who does not produce a pure article, can hope to compete for any time with his rival who does. Operators need to have no fears in this direction, if the profession require what it is necessary for them to have, in order for them to succeed in their operations.

Of the various forms in which gold is being used for filling teeth, we will only say,—that good results can be had with the proper manipulation of the several prepartions now generally in use. We may add that gold having the adhesive property is at present being used more exclusively than at any time previous—and we think it will continue to grow in favor, especially in difficult cases of filling, or where building up in the restoration of the shape of the tooth is desirable.

Success in the manipulation of this form of gold, requires much care in the preparation of instruments to be used. These should be of such forms as to reach every part of the cavity with facility—and the points should be in the most perfect working order. Several new forms of plugging instruments have been introduced of late—some of them of doubtful utility—save in the hands of the inventor. Nearly every operator has his own peculiar notions in relation to the form of his instruments, and we suppose there will be no end to invention in this direction. It is hardly expected we can try all things; but we should be able to make such selections as will aid us the more readily to perform good operations. In this connection we will mention an instrument first given to the profession during the last meeting of the American Convention, which we think valuable for the purpose it is intended. We refer to "Merry's Drill Stock." It is not complex in its construction, and yet by its aid approach can be had to points in cavities that could not be reached readily by any similar instrument we have yet seen.

The attention of the profession is being very generally directed toward the new method of producing *local anæsthesia* by the extraction of teeth by the use of Electro Magnetism, which process has been patented the past year. It has been quite extensively used for the length of time, since its first application. Still Many of those using it hesitate to give very decided opinions in regard to its efficiency. In many cases it appears to produce the desired result, and patients express themselves enthusiastically in its favor. In others if it does not positively aggravate the pain attending the operation, it does not perceptably diminish it. Sufficient investigation has not been given the subject as yet to form an opinion as to the manner in which it acts to produce insensibility in the case of its failure to produce the effect at times. All who have experimented with it to any extent, have had cases no doubt, when it was impossible to attribute its failure to any known cause. That there are certain temperaments or peculiarities of constitution, or favorable or unfavorable conditions of the teeth and surrounding parts that influence its workings to some extent, we have no doubt. But in order to ascertain in what these peculiarities consist, a series of systematic investigations must be commenced and their results compared.

Painless operations in dentistry are certainly desirable, and any application to attain this, should at least be tested by the profession. The impression is gaining ground we think, that dentists are rarely ever justified in administering chloroform or ether, in so slight an operation as the extraction of a tooth. Fatality it is true is rare in comparison with the number of cases in which these agents are administered, and every one hopes it will not happen in his hands. But the fact that it does kill, causes us to ask, is it proper for us to incur any amount of risk, when the same object can be attained by the use of any other agent less dangerous. Any discovery, therefore, which has any claims to commend it as useful in this direction, should receive our careful attention.

In this review of what has recently most contributed to the advancement of dental science, much that has doubtless aided in this respect, has been necessarily omitted; while other agencies may have escaped our observation. Still we think enough has been enumerated to cheer us with a hope for the future of our profession, and cause us to labor more earnestly hereafter for its advancement.

We have received a rich treasure of knowledge from those who have preceded us in our profession, gained under difficulties, through the experience of many years. Let us then endeavor to enlarge and increase that store, to be transmitted to those who are to succeed us. Let us each endeavor to leave the profession a little better and wiser than we found it.

H. A. Smith,
Jas. Taylor,
J. Taft.

FIFTEENTH ANNUAL MEETING OF THE MISS. VALLEY ASSOCIATION OF DENTAL SURGEONS.

DISCUSSIONS.

1. *Treatment of Inflamed or sensitive dentine.*

Dr. TAYLOR said he would not make a speech, but would allude to the use of a single agent—chloride of zinc. He preferred to use it in crystals, or paste, rather than in solution. This, he believed, was common to the profession. The point he wished to get at was the length of time the chloride should remain in the tooth. He formerly applied it from day to day, but was then often disappointed in its use, finding the tooth often as sensitive as ever. Now he applies it, in substance, and lets it remain ten or fifteen minutes, and seldom has difficulty in excavating afterward.

Dr. H. R. SMITH remarked that when we wait a day after applying the chloride, we usually find the tooth more sensitive than before the application. He agreed with Dr. Taylor as to the proper way to use it, and thought that for sensitive dentine it is, perhaps, our best local remedy.

Dr. TAYLOR had recently used a paste made of creosote and chloride of zinc combined. His method was to leave it in the tooth ten or fifteen minutes—usually till the pain produced by it has subsided. The use of it thus far had been highly satisfactory. He was of opinion that the chloride loses strength by keeping. He inquired if it destroyed the sensibility of normal dentine as readily as it did that of diseased. He thought it did not, and gave a case to prove the correctness of his opinion.

Dr. BONSALL thought the chloride does not change its properties by keeping, but is merely diluted by its absorption of water.

Dr. ULREY said that his experience with the chloride had not corresponded with that of Drs. Taylor and Smith. When he applied it one day, he did not find the sensibility increased the next.

Dr. Taft regarded chloride of zinc as one of our best therapeutic agents. It was very good in some cases, and of no use in others. In many cases sensibility would be increased by its use. He had applied it five or six times in an hour, and still the dentine remained sensitive. But in most instances in which it was indicated, a single application would be followed by satisfactory results. He preferred to have it in a crystaline form; and, with proper care, he said, it could be easily kept in this state. He had a bottle of it, which had stood on his case for several months, which was still crystalized. His method of using it was to apply it in substance, and let it remain till the pain subsides. If but a thin lamina be sensitive, a single application will answer the purpose. He believed that it not only acts as an escharotic, but also paralyzes the nervous fibrils beyond the range of its escharotic action. This paralysis gradually subsides, and, of course, then we find a return of the sensibility. He referred to a case in the treatment of which he repeatedly applied the chloride to a large cavity in a molar tooth. Every part of the cavity was highly sensitive, and no relief was obtained by the treatment. He filled the cavity with sponge gold, making firm pressure. The sensibility remained for some time afterward, but was now gone.

Dr. Taylor remarked that he had no doubt that the sensibility lost or destroyed by the chloride was, in due time, usually restored; and this fact, he thought, showed a recuperative power in the dentine which we had not previously been willing to concede. In the case just referred to, he maintained that Dr. Taft had paralyzed the nervous fibrils by the pressure used in filling the tooth. This doctrine he had once discarded, but had come back to it.

Dr. Bonsall remarked that though he used escharotics and astringents, yet he preferred the pressure of a hard cut, where it could be endured.

Dr. Webster remarked that he seldom uses chloride of zinc. He preferred the use of creosote protected, and retained in the cavity, by a pledget saturated with sandarac. He usually let the creosote remain in the cavity two or three days.

Dr. H. R. SMITH after using the chloride of zinc, was in the habit of applying a mixture of sulphuric ether and chloroform, equal parts by bulk,—this he applied to the gum as well as to the cavity in the tooth. He had used with success, as an application to dentine, the preparation of aconite mentioned by Dr. Teft, at the late meeting of the American Convention.

Dr. WATT spoke of the general action of escharotics. They act by virtue of their affinity for one or more of the constituents of the living tissue to which they are applied. The chloride of zinc has a strong affinity for water, especially in its crystaline form. A part of its escharotic action was due to this property. But it has also a strong affinity for albuminous tissues; and this it would manifest in solution, as well as when solid. With this view it was plain that its escharotic action would be much reduced by dissolving it. The whole action of this, and of all escharotics, is *chemico-vital.* The destruction of vitality in one part induced increased vitality in the subjacent parts. He thought it was on this principle that a *return* of, or even increased sensibility was to be explained. He referred to the first article in volume 10 of the *Dental Register*, for a further elucidation of his views on this subject.

Dr. RICHARDSON remarked that he seldom uses any thing to allay the sensibility of dentine; but, when he does, he usually prefers the chloride of zinc. The most sensitive points were usually just beneath the enamel. When he found the patient flinching, he usually sharpened his instrument, and cut deeper and quicker. Under this treatment the tooth became less sensitive, though he was at a loss to know just why. He thought, perhaps, the patient bore it better on finding that the operator was determined. He generally ascertained by a few experimental cuts, in what direction the least pain was produced, and then cut as much as practicable in that direction. He had used aconitine with doubtful results.

Dr. Taft stated that hard pressure, with a burnisher over the entire walls of the cavity, would allay the sensibility. The application would be attended with some pain, but so would any other efficient mode. When a small point between the enamel and dentine was sensitive, he said that to rap with a blunt instrument on the enamel, immediately over the point, would relieve it for a time; but, as it would soon return, a repetition would often be necessary. This, of course, he said, would not be applicable to all situations.

Dr. Compton had not used the chloride of zinc with satisfaction. He had usually succeeded best on the plan mentioned by Dr. Richardson.

Dr. Taft stated that, in some cases, the constitution would not admit of any successful *local* treatment. In many such cases the tooth may be filled, but it remains sensitive, the patient still suffers, and the tooth finally dies. Sometimes all the teeth were thus sensitive. If so, the constitution must be treated before filling. Local treatment also, will be of advantage, but must not be relied on to the exclusion of the other.

Dr. Bonsall said he regarded constitutional treatment as of great importance in such cases.

2. *Mechanical Dentistry.*

4. *To what extent are atmospheric plates applicable to partial sets of teeth?*

(By consent, these two subjects were considered together. —Rep).

Dr. Taylor inquired whether deep or flat arches were the more troublesome, in adapting suction plates to them.

Dr. Ulrey remarked that in regard to deep arches, he had nothing new to offer. In swaging plates to fit them, he used a number of dies. He would prefer an arch, neither very deep nor flat; but would rather have a flat than a very deep one. It was less trouble to fit the flat; but, when the flat was perfect, it would adhere more firmly than the deep one. In reply to a question of Dr. Taylor, he said that when the plate rests on the ridge, but does not touch the palate, he makes new dies and stretches the plate by hammering it down.

Dr. TAYLOR said that when the arch is very deep he preferred to make partial dies, and swage down the palatal portion first. In such cases he would cut out the cavity, that he might be able to see that the adaptation was perfect, and then swage a piece of plate to cover it, and solder it on.

Dr. BONSALL spoke of a case in which the absorption was very great,—the jaws were so far apart, that ordinary work would be too heavy. The arch was very deep; and the ridge seemed to be entirely cartilaginous. It had been found necessary to use springs. The patient's gold plates are now both lined with a gutta percha base, to atone for the absorption. He had suggested the use of the vulcanite base, but had promised the patient to report to her again.

Dr. WEBSTER inquired if, when the suction was good, the weight would be perceived.

Dr. BONSALL replied that a light piece would often be partly sustained by the muscles and other soft parts of the mouth, independent of the action of atmospheric pressure.

Dr. WEBSTER thought an ounce would fall as quick as a pound.

Dr. TAYLOR reported a case in which the arch was very shallow, and the lips attached almost to the center of the ridge. The lower jaw was very prominent, the natural teeth striking outside of those of the upper jaw. The patient, however, was not willing that the artificial teeth should antagonize in the same manner. Several dentists had made work for her, himself among the number; but none had succeeded in giving a practical job. He finally held out the upper lip, and took an impression with it in that position. He curved the border of the plate, extending it so high up that the curve rested firmly against the junction of the lip and gum. He used very long teeth for the upper jaw, and set them outside of the alveolar border, and mounted them by the continuous gum method. The plate adhered firmly, the features were restored, and the whole affair was satisfactory. The patient had since gone to Chicago; and he had just heard that Dr. Allport had put her up a cheoplastic set.

Dr. VANEMON inquired how far the lower ridge protruded beyond the upper.

Dr. TAYLOR replied, one inch.

Dr. VANEMON said he had a similar case which he managed in the same way.

Dr. RICHARDSON—Do we generally find a very large under jaw accompanied by a very small upper one?

Dr. TAYLOR—Yes.

Dr. BONSALL reported the case of a patient seventy-five years old, having the six natural front teeth in the lower jaw. The lower maxilla was very prominent, and the teeth protruded. The upper jaw was small, and very flat. After failing by the ordinary mode, he made a *very* light plate, and put but eight teeth on it; and the patient now eats very well with it. He thought that work of the ordinary weight would have failed, without more lower teeth to antagonize with.

Dr. RICHARDSON had such a poor opinion of partial lower sets that he very seldom put them in. In adapting upper sets, if one or both bicuspids, on each side below, were still standing, the work could be made quite satisfactory; and he advised patients not to have lower teeth inserted.

Dr. ULREY inquired what is the advice of the profession, if the six lower front teeth remain and are healthy, and the patient applies for an upper set.

Dr. TAYLOR said he would pull them out,—or, if not, he would insert lower teeth.

Dr. BONSALL would not extract them, if the patient was young.

Dr. RICHARDSON said that if the posterior portions of the jaw curved so as to incline the plate to press forward, rather than backward, he would insert a lower plate. To Dr. Taylor—he said he would prefer to have the wisdom teeth in, if healthy and standing favorably, as they would prevent the plate from sliding back.

Dr. Ulrey would save all sound healthy teeth—even two in the upper jaw. He reported a case in which there were two good molars on each side of the upper jaw, which the patient wished to have extracted, to make room for a full upper set. He refused to extract them. She finally determined that, if he would not, she would get some one else to remove them, and then have him (Dr. U.) to insert the artificial set. He removed them, but was now sorry that he did so. He asked for the views of the members in regard to the matter.

A decided majority declared their opposition to extraction, under the circumstances.—Rep.

Dr. Taft remarked that deep arches gave most trouble, especially if the rugæ were soft. The difficulty was to get a perfect conformation of the plate. The size and situation of the rugæ, and their extent, modified the case. In all such difficult cases he preferred to take the impression in plaster. The plaster used for impressions should be selected with care. We should obtain that which does not suddenly pass from the plastic to the solid state. Then, properly stirring it till it is nearly ready to set, it should be applied, while it is still quite soft. In these difficult cases, he would prepare, and use if necessary, a number of dies, and, if he made a cavity plate, he would cut out the portion covering the cavity, swage down and solder on the covering.

Dr. Vanemon remarked that when a plate fits well, the patient would experience no senstion of weight. The pressure upward would be equal to the downward pressure, otherwise the plate would not be sustained. A light piece, he maintained, would drop as quickly as a heavy one. He supposed that all would concede that weight was no objection to under sets. In answer to the President, he stated that he makes none but continuous gum work.

Dr. TAFT thought that weight was worthy of consideration. A weight might be held by atmospheric pressure, to the under side of one scale of a correct balance ; and it would certainly indicate its presence, by the tilting of the beam.

Dr. VANEMON did not think this was a correct illustration of the principle under consideration.

Dr. RICHARDSON thought weight had much to do with the adhesion of plates ; as very light plates would often adhere, when the fit was very imperfect,

Dr. H. A. SMITH wished to know if there was a perfectly reliable mode of obtaining a natural "bite," as a guide for antagonizing the teeth.

Dr. WEBSTER thought the under jaw could not be forced too far back. We had, therefore, a reliable guide in one direction.

Dr. VANEMON said he had seen cases in which the lower jaw could be forced farther back than its natural and comfortable position. His own course was to let the patients sit erect, in an easy position, and have them shut the mouth, while the attention was devoted to something else. He then retained the jaw in the position it assumed, and had the mouth closed to the proper degree.

Dr. COMPTON remarked that he uses continuous gum work almost exclusively. His platinum plates are not very heavy, as he believes as good work can be made on comparatively light plate. He solders with pure gold, in a muffle. He makes partial sets on gold, with a small platinum plate stamped over it. He sets the teeth, lifts off the platinum plate, puts on the gum, and solders in a muffle. He then attaches the platinum to the gold plate by rivets.

Dr. ULREY inquired if there was not danger of galvanic action.

Dr. COMPTON said there was none. He would add farther, that every thing must be clean about it; and pure gold must be used for solder.

Dr. WATT said that no galvanic action could ensue from the contact or presence of two metals in the mouth, unless the fluids of the mouth were capable of acting chemically on at least one of them. As neither the gold nor the platinum would corrode in the mouth, no galvanic current would be establish

Dr. ULREY reported a case in which the patient's lips were blistered, by wearing a gold plate above, and a silver one below.

Dr. WEBSTER reported a similar case and said that when the silver plate was brightened, the action was stronger, till it again became corroded.

Dr. S. B. SMITH had put in but three silver plates in the last ten years; he would not put two metals in the mouth, as in the cases referred to by Drs. U. and W. The effect might not be very perceptable at first; yet bad results were likely to follow. He had, in some instances, put in gold, at the price of silver work rather than do it.

Dr. TAFT wished to know in what proportion of cases the members present use the atmospheric pressure plates for partial sets.

Dr. ULREY said he had but recently resorted to suction plates for partial sets—used them now in about five per cent of his cases.

Dr. VANEMON supposed he used them in about 15 per cent of his cases.

Dr. WEBSTER—In not more than one case in a hundred.

Dr. TAYLOR—In pieces of more than four teeth, about 50 per cent; with less than four teeth, about 15 or 20 per cent.

Dr. H. A. SMITH—About 25 per cent.

Dr. S. B. SMITH—Uses them in a very small proportion of cases. As the injury from clasps was chemical, he maintained that it might be mostly prevented, by proper attention to cleanliness.

Dr. Wardle has used them in about 25 per cent of his cases—would use them oftener if the patients would pay prices that would justify his doing so. He further remarked that he usually took impressioms for partial sets in plaster. Formerly he had been troubled with the plaster drawing from the impression cup; but he had so constructed a cup, as to effectually prevent such an accident.

Dr. Richardson said that the difference in cost, between clasp, and suction plates, was more apparent than real. The clasp plates were narrower; but they required greater thickness. In a plate for three, or four teeth, there could not be more than two or three pennyweights. Consequently, the difference in cost was a matter of small moment. He was daily becoming more in favor of atmospheric plates, and supposed that, in the last six months, he had inserted fifty per cent. of his partial sets on this plan.

Dr. Watt seldom used clasps. Inserted fully ninety per cent. of partial sets on suction plates. Would rather insert them than clasp plates, at the same price.

Dr. Taft said the per cent. stated by Dr. Watt was none too high as regarded their practice when together. He scarcely ever uses clasps. He regarded this as a vastly important question. Thousands of teeth were destroyed annually by the use of clasps. As to difference in price, that was not worth taking into the account. He would rather make the suction work, at the same price. He could make three suction jobs, while he could make two clasp ones. He preferred plaster impressions, and regarded Dr. Wardle's impression cup as an important improvement, for taking partial impressions in plaster. This method was just as applicable to "ragged" jobs as to full arches. In such cases he would make the main plate thin, and would thicken the narrow necks passing between the teeth. He considered that clasps were never safe; as people could not be induced to take sufficient care to prevent injury to the teeth to which the clasps were attached.

Mr. J. T. Toland and assistants now brought in the flasks, containing the pieces of "coralite base" which were packed yesterday, these being now vulcanized. While they were removing them from the flasks and plaster, the remarks of the members took a very wide and interesting range, to which we can not pretend to do justice.

Dr. Taft exhibited a full set of teeth, mounted on the "coralite" base, which had been worn a few weeks with entire satisfaction, and which, as yet, showed no symptoms of change from the action of the fluids of the mouth.

Dr. Watt, on behalf of Thomas Coke Wright, Esq., of Xenia, exhibited to the association a forcep and two gum-lancets, which were made by Mr. Wright's father, and used by him as early as 1787, and as recently as December, 1858, the venerable operator being over ninety years old, when he extracted the last of his own teeth, with his own instruments—his favorite "*'peasers.*" As he was now ready to resign his instruments, he donated them to the museum of the Ohio Dental College. Mr. W., throughout, discarded the turn-key.

Dr. Taylor gave an interesting sketch of some of the early scenes of his professional life, in one of which he made the acquaintance of Mr. Wright above referred to, and operated for some members of his family, he having previously become acquainted with his son, T. C. Wright, Esq. [We believe Dr. T. promised us a sketch of these early scenes for publication.—Rep.]

Dr. Bonsall said that, before we thought of dies for swaging, he had seen a plate made by pressing several thin layers of gold successively on a plaster model, and then soldering them together.

Dr. Lindsey remarked that he makes his suction plates without cavities. [Dr. L. did not arrive till after the principal discussions on Mechanical Dentistry were over.]

3. *Treatment of dental periostitis, and alveolar abscess.*—Dr. Taft remarked that the ordinary indications of peri-

ostitis are familiar to all. The principal are soreness, and elongation of the teeth. The latter symptom is modified by the character or shape of the root. In treating it, it is necessary to consider the character and state of the constitution, the predisposing, and exciting causes, and also whether the case be acute or chronic. All these considerations would modify the treatment. In ordinary cases, local treatment would suffice. The local treatment would consist, mainly, of depletion and counter-irritation. If the case were of long standing, more heroic treatment would be necessary than for a recent case. Constitutional treatment would often be required. The Dentist might conduct this himself, or refer the case to a physician. To induce counter-irritation, he frequently made an incision in the gum, opposite the end of the root, and cauterized it with creosote.

Dr. RICHARDSON said that one result of periostitis had given him a great deal of trouble. He referred to the swelling of the gums and face. This was often found in connection with the front teeth, if they were filled when the pulps were exposed, or nearly so. Pain and swelling were not always relieved, in such cases, by removing the filling. Suppuration has not yet taken place; and it is desirable to have the case terminate in resolution. He would like to hear from the members in regard to the proper treatment of those cases. He did not like warm applications—thought they tended to promote suppuration. He had used cold—even ice—with advantage. He thought stimulating applications increased the difficulty.

Dr. TAFT remarked, in explanation, that, in his remarks, he had reference only to cases in which the inflammation was confined to the periosteum.

Dr. RICHARDSON replied that that far, they mainly agreed.

Dr. ULREY thought that there was danger of producing necrosis of the alveolar process, by the free application of creosote to the gum.

Dr. TAFT stated that, in regard to cold and warm applications, he sometimes used the one, and sometimes the other, with benefit. He could not give a clear explanation of the reasons why he preferred the one to the other in any given case. The various pathological conditions were to be taken into consideration.

Dr. LINDSEY said that he usually gives an emetic, and then steams the face with the vapor of vinegar.

Dr. WATT remarked that, when there was an increased quantity of blood in the part, yet no obstruction in the vessels, the application of cold, by contracting the vessels, would dispel the surplus quantity of blood, and thus relieve the pressure; but, if the vessels were obstructed, their contraction would only increase the pressure, and consequently the pain, while the application of warmth, by dilating the vessels, might allow the blood to flow on without obstruction, and thus afford relief. If this view were correct, he maintained that the feelings of the patient would furnish a reliable guide in selecting the class of applications.

Dr. TAYLOR said that Dr. Watt had advanced his ideas. He was in the habit of using cold, or warm applications, as the feelings of the patient might direct. He said it was important to notice the first symptoms of periostitis. For instance, if the pulp is dead, and the canal filled, a little uneasiness might be felt, scarcely amounting to actual pain. That was the proper time to treat the case. He generally cautioned his patients in regard to such cases, and directed them, in case of difficulty, to use cold applications, if not painful, and to take a brisk cathartic. He referred to a case in his own mouth, several years ago. The pulp of a lateral incisor died, and periostitis ensued. He took an emetic, and was relieved. The disease returned about once a year, and was relieved, a second and a third time, by the same remedy. In a fourth attack, however, it failed. In the latter case, the inflammation had terminated in suppuration, in the former, it had not. The pulp, he said, was generally dead before periostitis is established; and relief might often be obtained by taking out the plug, and opening the pulp cavity. As to poulticing, he said physicians usually adopt it; yet he thought the swelling was increased by it. Instead of poultices, he was in the habit of applying roast figs to the gums.

Dr. BONSALL said he was opposed to the use of poultices. He thought they tended to point the abscess externally, in case of suppuration. He recommended roast figs, as mentioned by Dr. Taylor. When the abscess showed a tendency to point externally, he applied pressure on the outside, by a cap of sheet lead, supported by a binder. He thought much could be done in this way.

Dr. RICHARDS said that when it became evident that an abscess would point externally, he used the lancet to open it; as the scar would be less unsightly, than if it were left to open spontaneously.

Dr. LINDSEY said he would always extract the tooth, if the abscess showed symptoms of opening externally.

Dr. ULREY said that, when it must open externally, he would use the lancet, and also extract the tooth; as the discharge would be likely to continue, while the tooth remained.

Dr. H. R. SMITH said we could usually tell when there was danger of periostitis. In its earliest stages, he would apply to the gums a mixture of ether, chloroform and ammonia. He would also use constitutional treatment—an emetic in a bad case. He would, if necessary, use derivations freely, and, with a straight bistoury, would cut down from the neck of the tooth till the point of the instrument was opposite the end of the fang, and would keep this incision open. Then, if suppuration took place, it would point to this.

5. *Anæsthetic agents, use of, in the extraction of Teeth.*—Dr. TAFT said he abandoned ether and chloroform two years ago, on account of the danger incident to their use. If he used either of them now, he would take ether alone. More deaths from chloroform were reported now than formerly. Local anæsthesia, by congelation, was not objectionable on account of danger, but it was, to say the least, very incon-

venient. It was also painful, if not very gradually applied. He had used it but little; and, in his practice, it had often produced severe pain, but had sometimes almost entirely relieved the pain of extraction. If the process and gum were very thick, he considered it impracticable; if very thin, so that congelation to the end of the fang could be induced, it might be of use. He had experimented some with the galvanic current. He didn't pretend to know how it operates. He was at a loss to know how to account for the difference of opinion among the profession. Some say they always succeed,—others always fail. [Dr. T. told a humorous anecdote, in regard to a failure with the battery; but, as all who know us are aware, we are opposed to anecdotes—don't tell them, and won't let Dr. T., at least in this report.—Rep.] He said, further, that the strength of the current must be tested with each patient, before applying it to the tooth. The shocks should be felt to the elbows; and then the force should be slightly diminished. Sometimes, however, it might be used much stronger than this. In general, it should not be unpleasantly strong. The finer the vibrations of the machine, the better; and either pole might be connected with the forcep. Intense pain, he said, was sometimes felt when the tooth was affected with periostitis. He said that we may be so awkward, in the use of the battery, as to cause pain unnecessarily, but as long as in nine cases out of ten, the patient stated that there was little or no pain, he was bound to believe that the electric current had some influence. He referred to a patient who had waited for three years to have some fourteen or fifteen teeth extracted. Hearing of this method, she came to have *one* removed by way of experiment. She had all removed, and said there was no pain. A properly constructed battery, he said, was easily arranged—could be charged and ready for use in half a minute.

Dr. Bonsall said he had not used the battery; but he reported a case of a patient of his who had very firm teeth. Knowing that Dr. Taft was experimenting with the battery, he advised the patient to have the experiment tried on his teeth. The battery was applied, and, after taking out several teeth without any complaint from the patient, one seemed to hurt badly. The patient insisted that something had got wrong in the arrangement of the apparatus. They maintained that all was right, and concluded that a failure had occurred; but, on further examination, they found that the forceps was disconnected. It was readjusted, and all went off satisfactorily. He said, further, that he does not use chloroform. He had seen several cases where the health was bad after its use, as he believed, from the nervous shock produced by it. He was, however, very favorably impressed with electricity, since seeing it used.

Dr. H. A. Smith spoke of a case experimented on in the College Infirmary. The patient had several teeth to be extracted. The battery was used on each alternate tooth, the patient not knowing that the connection was broken. The difference in favor of the battery was very obvious. In this case, he used the gum lancet, in connection with the battery, and, he believed, with benefit. He was opposed to the use of chloroform in dental operations.

Dr. Keely had not used the battery. He did not administer ether or chloroform himself, but had frequently operated when chloric ether was administered by a physician.

Dr. Watt said that, if the operation to be performed was very severe, and there was nothing in the constitution of the patient to contra-indicate it, he would use a mixture of ether and chloroform. The severity of the operation lessened the danger. When he could get at the teeth, with the patient in a recumbent posture, he preferred that position for the administration of anæsthetics. He thought there was less danger. If the symptoms became alarming, he always suspended the administration of the anæsthetic. As to the battery, he had experimented a little with it, and was highly pleased with the results. He supposed it lessened the pain by rousing the nerves concerned in the operation up to the "fighting point." In a battle, or street fight, a man may receive a severe—even a fatal wound, and yet feel no pain when it is inflicted.

Dr. BONSALL said his own experience confirmed the last remark of Dr. W. In resisting a mob, he once received a hurt which kept him in bed some time; yet he did not feel it when inflicted, but fought on, till the riot was quelled.

Dr. COLLINS said that if the horizontal position is safer, in using chloroform, it was probable that the danger in its use arises from loss of tonicity in the vessels, and not from a disorganization of the blood.

Dr. LINDSEY said he was an early user of ether, but did not like it. Now he uses chloroform, and likes it. He gives it to all that want it, and to some that don't. He referred to a case in which great prostration occurred; but the patient was sustained by artificial respiration. He would never administer chloroform to a lady, without the presence of a third person.

Nos. 6, 7, and 8, were not discussed, for want of time. The reporter would state, in conclusion, that the discussions assumed, at this meeting, more of a conversational character than usual. Practical ideas seemed to be in demand. Much of the most interesting and profitable portions of the proceedings can not be reported for want of the specimens and appliances by which they were illustrated. No report can do justice to an old-fashioned meeting of the MISSISSIPPI VALLEY ASSOCIATION. W.

HISTORY OF THE OHIO COLLEGE OF DENTAL SURGERY.

See "Dental Register," Vol, VII, page 262. The name of JAMES P. HILDRETH, of Marietta, should be added as one of the Trustees.

IN the spring of 1845, the Trustees met and organized, by appointing Rev. B. P. Aydelott, M. D., President, and Israel M. Dodge, M. D., Secretary.

Whereupon, they organized the school by creating the following Chairs, viz:

Dental Anatomy and *Physiology*—to which Jesse W. Cook, M. D., D. D. S., was appointed Professor.

Dental Pathology and *Therapeutics*—to which Melancthon Rogers, M. D., D. D. S., was appointed Professor.

Practical Dentistry and *Pharmacy*—to which James Taylor, M. D., D. D. S., was appointed Professor.

Jesse P. Judkins, M. D., was appointed Demonstrator of Anatomy, and Dr. James Taylor performed the duties of Demonstrator of Practical and Mechanical Dentistry.

The faculty, soon after their appointment, met and on ballot, Prof. Jesse W. Cook was elected Dean, who thereupon issued the first announcement, and the school was opened the first Monday of November, 1845.

The Faculty, on their organization, adopted the following Resolutions:

1. *Resolved*, That the term of each session of the School shall extend from the first Monday of November to the 20th of the following February.

2. *Rosolved*, That at the regular meeting at the close of each session, an election for Dean shall be held. And that the following, in relation to the requisitions for graduation—[See "American Journal of Dental Science," Vol. V, page 303.]

The opening address of the College was delivered by Rev. B. P. Aydelott, M. D., President. And the valedictory address to the graduating class by Prof. J. W. Cook.

February, 1846, the Faculty met and elected Prof. M. Rogers Dean; who, in June, issued the second annual announcement. Elijah Slack was by the Faculty appointed Lecturer on Chemistry; and the following resolution was passed by the Faculty:

Resolved, That no student shall be allowed the single ticket of any of the professors except those on Anatomy and Chemistry.

Valedictory to graduates, by Prof. M. Rogers.

February, 1847, Faculty met, and elected Prof. J. Taylor Dean; who, in due time, issued the third annual announcement.

October, 1847, Faculty met, and Prof. J. W. Cook tendered his resignation, which was by the Trustees accepted; and appointed to the Chair of Anatomy and Physiology, thus made vacant, J. F. Potter, M. D. The faculty appointed Dr. Wm. M. Hunter Demonstrator of Mechanical Dentistry. Jesse P. Judkins, M. D., resigned his place as Demonstrator of Anatomy, and Elijah Slack, M. D., continued to lecture on Chemistry. Valedictory to the graduates, by Prof. J. Taylor.

February, 1848, the faculty met, and Profs. J. F. Potter and M. Rogers resigned their respective Chairs; and no new election was held for Dean.

The Trustees met, during the summer, and having accepted the resignations of Profs. Potter and Rogers, appointed to the Chair of Dental Anatomy and Physiology, Prof. John T. Shotwell; and to the Chair of Dental Pathology and Therapeutics, George Mendenhall, M. D. The Faculty appointed A. M. Leslie, D. D. S., Demonstrator of Mechanical Dentristry. The Faculty appointed Charles H. Raymond, M. D., Lecturer on Chemistry. Valedictory to to the graduating class, by Prof. J. Taylor.

February, 1849, no election for Dean; but Dr. J. Taylor held over, and issued the annual announcement. Prof. Geo. Mendenhall delivered the valedictory to the graduating class.

February, 1850, no election for Dean was had. Prof. J. T. Shotwell resigned the Chair of Anatomy and Physiology. During the summer, the Trustees met; and having accepted the resignation of Prof. Shotwell, appointed to the Chair of Anatomy and Physiology, Thos. Wood, M. D.; and created a new Chair of Mechanical Dentistry, and appointed to the same, A. M. Leslie, D. D. S. The Faculty appointed Wm. H. King, D. D. S., Demonstrator of Mechanical Dentistry, and assistant Surgeon in the Infirmary. The Faculty passed the following resolution:

Resolved, That a committee of two from the medical and three from the dental profession be selected, annually, to examine, in connection with the Faculty, the candidates for graduation.

Whereupon, Charles Woodward, M. D., and Israel M. Dodge, M. D.. were selected from the medical, and Drs. N. Clute, W. E. Ide, and J. Allen, from the dental profession.

In December, Dr. A. M. Leslie resigned the Chair of Mechanical Dentistry, and Dr. J. Taylor, filled the same for the remainder of the session. Valedictory to the graduating class, by W. E. Ide, M. D.

February, 1851, no election for Dean,—Dr. J. Taylor held over. During the summer, the Trustees having accepted the resignation of Prof. A. M. Leslie, met and changed the Chair of Mechanical Dentistry to the Chair of Operative and Mechanical Dentistry, and appointed to the same, John Allen, D. D. S. They also changed the Chair of Practical Dentistry and Pharmacy to that of Principles and Practice of Dental Surgery, and appointed to the same, Dr. James Taylor.

The Faculty appointed G. L. Van Emen, D. D. S., Lecturer on Dental Chemistry, and Demonstrator of Operative and Mechanical Dentistry.

The following gentlemen were chosen a committee for the examination of the graduating class:

Physicians.—Profs. Jesse P. Judkins, M. D.; and L. M. Lawson, M. D.

Dentists.—Wm. M. Wright M. D., D. D. S.; H. R. Smith, D. D. S.; and E. Taylor, M. D., D. D. S.

Wm. M. Wright, M. D., delivered the valedictory to the graduating class.

February, 1852, Prof. J. Taylor was continued as Dean; who issued the annual announcement as usual. The examining committee, this year, was as follows:

Dental.—Dr. R. Somerby, Louisville, Ky.; Dr. E. Hale, St. Louis, Mo.; and Dr. A. L. Talbert, Dayton, Ohio.

Medical.—P. S. Conner, M. D., and P. G. Fore, M. D., Cincinnati, Ohio.

Valedictory to the graduates, by Prof. J Allen.

February, 1853, Prof. J. Taylor was continued as Dean. Prof. G. Mendenhall resigned the Chair of Pathology and Therapeutics, and his resignation was accepted by the Trustees, and J. B. Smith, M. D., was appointed to the same.

The Chair of Operative and Mechanical Dentistry was divided into two departments,—a Chair of Operative Dentisty, which was assigned to Prof. J. Allen; and a Chair of Mechanical Dentistry, to which was appointed H. R. Smith, D. D. S.

The Faculty appointed G. Watt, M. D., Lecturer on Chemistry.

Dr. G. L. Van Emon resigned his place as Demonstrator, and the duties were discharged by the Professor of Mechanical Dentistry. The examining committee were—

Dental.—A. L. Talbert, D. D. S., Lexington, Ky.; W. H. Goddard, D. D. S., Louisville, Ky.; and H. E. Peebles, D. D. S., Lexington, Mo.

Medical.—Prof. G. Mendenhall, and Israel M. Dodge, M. D., Cincinnati, Ohio.

Valedictory to the graduating class, by Prof. H. R. Snith.

February, 1854. Prof. J. Taylor was continued Dean of Faculty. Prof. J. Allen resigned the Chair of Operative Dentistry; the resignation was accepted by the Trustees, and Jonathan Taft, D. D. S., was appointed to the same.

The Faculty appointed George M. Kellogg, M. D., Lecturer on Chemistry. The examining committee were—

Dental.—J. P. Ulrey, D. D. S., Rising Sun, Ind.; J. G. Hamill, D. D. S., Georgetown, Ky.; and C. H. Quinlan, Chicago, Ill.

Medical.—Profs. L. M. Lawson, and John Davis, Cincinnati, Ohio.

Janitor—Mr. Joseph Edwards.

Address to the graduating class, by Prof. J. Taylor.

February, 1855, Faculty met and elected Dr. J. Taylor, Dean.

Prof. T. Wood resigned the Chair of Anatomy and Physiology, which was accepted by the Trustees, and Prof. C. B. Chapman was appointed to the same.

The Trustees changed the Chair of Principles and Practice of Dental Surgery, to that of Institutes of Dental Science, and assigned to the same, Dr. J. Taylor. They also created a Chair of Chemistry and Metallurgy, and appointed to the same, Dr. George Watt, D. D. S. The examining committee were—

Dental.—Drs. J. P. Ulrey, T. R. Willard, and G. W. Keely.

Medical.—Profs. W. H. Mussey, and C. M. Langdon.

Address to the graduating class, by Prof. J. Taft.

At the close of the session of 1855–56, Dr. Taylor declined being a candidate for Dean. On balloting, it was found that Geo. Watt was duly elected Dean of the Faculty, for the session of 1856–57. The annual announcement was issued in July, under the same Faculty as that of last year. Dr. H. A. Smith of Oxford, Ohio, was appointed Demonstrator of Operative and Mechanical Dentistry.

The session opened, as usual, on the first Monday of November, and closed the 25th of February ensuing. The Commencement exercises were conducted in the lecture-room of the College, on the evening of the said 25th of February,—Rev. Dr. Aydelott, president of the Board of Trustees, conferring the Degrees, and presenting each graduate, as usual, with a copy of the Holy Bible. He also delivered an address to the graduates, on "The Professional Studies of the Dental Pupil;" and Dr. Watt delivered the "valedictory," on behalf of the Faculty.

At the close of this session, Prof. H. R. Smith resigned the Chair of Mechanical Dentistry. The College Association recommended Dr. Joseph Richardson, of Cincinnati, to the Board of Trustees, as a suitable person to fill the vacancy; and he was, in due time, elected to said Chair, by the Board. Dr. G. Watt was re-elected Dean of the Faculty for 1857–58.

The annual announcement of the session of 1857–58 was issued in July. The session began the first Monday of November, and closed the 17th of February following.

The Degrees, as usual, were conferred by President Aydelott; who addressed the candidates on "The Ethics of the Dental Profession." The "valedictory" was delivered by Prof. Chapman. Dr. J. Taft was elected Dean, for session of 1858–59.

The fourteenth annual announcement was issued early in July. The Faculty remained as during last session. Dr. H. A. Smith was continued as Demonstrator.

The session of 1858–59 opened with a preliminary course on the 18th of October; and the regular course, on the first Monday of November. The class numbered twenty-three. There were nine graduates. The commencement exercises took place on the 23d of February. Dr. B. P. Aydelott, President, conferred the Degrees, and delivered an address.—The address to the graduates was delivered by Dr. W. W. Allport, of Chicago.

LIST OF STOCKHOLDERS OF THE OHIO COLLEGE OF DENTAL SURGERY.

James Taylor, Cincinnati, Ohio,
Chas. Bonsall, " "
A. Berry, Raymond, Miss.,
G. L. Vanemon, Cincinnati, Ohio,
W. C. Duncan, " "
Edward Taylor, " "
Thos. Wood, " "
Geo. Mendenhall, " "
J. B. Smith, " "
J. M. Brown, " "
Samuel Wardle, " "
John Allen, New York, N. Y.,
Wm. M. Wright, Pittsburg, Pa.,
H. R. Smith, Cincinnati, Ohio,
Jon. Taft, " "
A. S. Talbert, Lexington, Ky.
C. W. Spaulding, St. Louis, Mo.,
H. E. Peebles, " "
H. J. B. McKellops, " "
J. S. Clark, New Orleans, La.,
James Knapp, " "
Chas. E. Keels, " "
W. S. Chandler, Port Gibson, Miss.
David Dougherty, Bardstown, Ky.
M. N. Manlove, Logansport, Ind.
J. P. Ulrey, Rising Sun, Ind.
J. W. Baxter, Warsaw, Ky.
E. Bray, Evansville, Ind.
E. A. Herman, Nashville, Tenn.
Moses De Camp, Mansfield, Ohio,
Geo. W. Keely, Oxford "
Jones, White & McCurdy, Phila.,

J. B. Dunlevy, Pittsburg, Pa.
Wm. R. Webster, Richmond, Ind.
George Watt, Xenia, Ohio,
Joseph Richardson, Cincinnati, O.
H. A. Smith, Oxford, Ohio,
Jas. S. King, Pittsburg, Pa.
G. J. Fredricke, New Orleans, La.
A. J. Reeve, Mt. Vernon, Ohio,
Edgar Taylor, Palmyra, Mo.
Samuel Griffith, Louisville, Ky.
J. B. Miner, Milwaukee, Wis.
John T. Toland, Cincinnati, Ohio,
C. B. Chapman, Madison, Wis.
W. W. Allport, Chicago, Ill.
David W. Perkins, Milwaukee, Wis.
I. B. Branch, Galena, Ill.
B. B. Ward, Mobile, Ala.
J. M. Lewis, Marion, Ill.
Eli Collins, Connersville, Ind.

At the annual meeting of the Association, Feb. 1855, each member was voted a share of stock.

James Taylor,
Thos. Wood,
J. B. Smith,
Jon. Taft,
H. R. Smith,

List of those who have been elected members of the Ohio Dental College Association and are not stockholders.

J. F. Johnston, Indianapolis, Indiana,
J. L. Milton, Lexington, Mississippi,
A. L. Dwyer, Greenfield, Ohio.

DENTAL QUACKS, NO. 3—CONTINUED.

BY H. R. SMITH.

[The issue between Drs. Smith and Dills, of which the following embraces a portion, is a matter with which, so far as the personalities are concerned, the profession have little to do, and probably care quite as little. The principle involved, is one, however, that is of vital importance to the profession. Upon the rectitude of character, of the individual members of a profession, does the character of that profession depend. The principle which Dr. Smith sought to maintain in his first article, will be admitted by *all*, to be correct. The only point of issue being how *far* a man may go, without violating the principle. We think it is better to keep surely on the safe side, rather than to try to go as far as possible. Dr. D. is unfortunate in the matter,—his reply brings him prominent before the profession, as much as to say, I am the man to whom Dr. Smith refers; and then goes to work, to prove himself "not guilty" of the charge. There will be various opinions entertained, and it would have been better, had Dr. D. not appropriated any of Dr. S.'s article to himself at all.
We hope that this style of controversy will be less employed.—Ed.]

Messrs. Editors:—Circumstances compel me to come before you and the dental profession again in a manner that I would wished to have avoided. But when you open your pages to an assault on my private character, in reply to an article written on professional quackery, I feel obliged to appear again before the same readers, to explain what I have done and my motive for so doing.

In number one of the present volume of the *Register*, there was an article on Dental quackery, and to illustrate, "a case from life" was cited, every sentence of which, excepting names, was true as documents will prove.

In a week or two after the publication of the article, a gentleman (if the person could with impunity be called such) came into my office and with a very long visage opens the subject of the article. He owned up to the truth of it in full, but put in the flimsy excuse of its being the work of another, for which he was not responsible. He also took particular pains to visit the offices of several dentists in the city, and with great efforts abused me as far as his language could go—thinking thereby to exonorate himself by prejudicing them against me. But failing to accomplish his object to his mind, he seeks another channel.

We next find him in number two of the *Register*, over the name of Dr. C. C. D., with an extensive article—on what? Clearing up his character and proving my assertions false? No; none of these. What then? Why in his own estimation at least, he makes out a case of malicious persecution against an innocent and unoffending brother of the profession; and also proves his accomplice, the editor, out to be either an knave or fool.

But before we proceed further let me introduce to the profession the author of the article on Dental quackery, number two, in the December number of the *Register.*

The author is Dr. Cephas C. Dills, formerly of Piqua, Ohio. When the article was published he was a partner of a Dr. Hamilton, residing in New Castle, Indiana. He now, I am informed, resides in Peru, Indiana. His accomplice, the editor, is I. S. Drake, formerly of Xenia, Ohio, who has of late sported the titles of Doctor, Banker and Editor. He now edits a newspaper, at New Castle, Indiana.

It is not my intention to bandy words with Dr. Dills, or occupy much space in the *Register* in reviewing his very dignified article. Still, lest he thinks that I meant to slight his article, I would call the attention to a few things as we are passing.

In the first place I would call attention to his text, the last clause of which says that *naught will cure his wounded honor but my heart's blood*, &c.

Thus much if not sound dental ethics is at least very chivalric.

After much preliminary talk he says that my course was calculated "to stifle in the heart, what little aspirations he might have, to attain to the full stature of a man in the profession."

True, very true indeed. I would in fact stifle in infancy; aye, I would blight *in utero* all such deformities as his professional cause was *promising* to become. After some historical data he makes use of private correspondence to prove my maliciousness. But I think it will take a pretty strong imagination to draw any such conclusion. I shall let others judge of the tone indicated by these letters without any comment from me.

He next says that it is unnecessary for him to say "that the dental profession is in its infancy, &c." Well, to many of the profession, that will at least be news, for we are fain to believe that our profession has now grown to be an adult, and stands alongside on the same platform with her sister science, Medicine.

Dr. Dills spoke of his article in the newspaper as being a very good and smart joke—perhaps it is so. But like the joke perpetrated when the boys pelted the frogs—fun for the boys, but death to the frogs. So his joke may be fun for him, but death to the profession.

And lastly, he brings his accomplice in, to turn states evidence, who to clear Dr. Dills, is willing to acknowledge himself the scoundrel, thereby ending the suit.

But with all Dr. Dill's cunning, the readers of his article will undoubtedly recognize in him the counterpart of the animal who to avoid detection runs his head into a hole, but leaves his tail sticking out. I shall not sum up the evidence against the Doctor for it is too plain to be mistaken. I shall therefore leave him to swing on his own gallows, suspended by the cord as he himself adjusted it, hoping he will have a plesant time of it.

I regret exceedingly that with the good primary dental education Dr. Dills has had, with the examples set before him, he should so far swerve from the true professional path as to do as he has done. It also pains me to know that after he is detected in one wrong, he tries to exonorate himself by recklessly plunging into another; but, one that will serve to lower him in the estimation of all who read his article.

It may seem somewhat strange to some of the profession that I bring before the public a graduate of the college with which I had once the honor to be connected as one of the teachers.

As I had no private feelings to gratify, I did it with reluctance.

The evil did not originate with Dr. Dills, but was one that had been growing for some time, until with him it reached a culminating point.

It was not that I loved Dr. Dills less, but that I loved the College more; therefore, in hopes to save the parent from disgrace, I consented to the punishment of the undutiful child.

Now Messrs. Editors permit me to bear testimony that the course the Ohio College has ever taken and sustained, is to set the standard of excellence high, to frown upon and discountenance in every way and place, quackery and false pretensions, not only in the profession at large, but especially in all the students going out from the College. The Faculty and Trustees, through their President, have ever dismissed the graduates with the glorious injunction to be strictly honest in all their actions and pretensions, and to seek to honor their alma mater by keeping up the standard of the dental profession. And how much should it pain them when one of their graduates turns recreant to the noble principles taught by them.

And what can the feelings of such a one be, when he looks back to the night when the venerable President with full confidence in the receiver, gave him the diploma and Holy Writings, and at the same time called down the blessings of God to keep and protect him in a path of virtue and honesty.

Though not at present connected with the Ohio Dental College, I feel a warm friendship for her, because in her I see a moving power that is to qualify, regulate and protect the profession of which I feel proud to call myself a member. And from the professors of the College I have every reason to expect co-operation and sympathy in the stand I have taken in relation to quackery of the graduates, and when such is not the case, I shall feel that the cherished principles of the College are subverted and countenance given to quackery.

Am I to be sustained by an enlightened profession? or shall fear of offending the brazen-faced pretender seal the mouths and stop the pen. Time must tell.

CLEANLINESS.

The virtue of cleanliness is characteristic of civilization. The higher the grade of their social advancement, the more apt are a people to rid themselves "of the earth earthy." Cleanliness, indeed, is the heraldry of genuine aristocracy. The man who is content to go dirty, is a born plebeian, whatever may be his wealth, talents, or family. Yes,

"The man who hath no cleanness in himself,
Nor is not moved toward washing with clean water,
Is fit for gutters, still-slop-pens, and fleas:
Let no such man be trusted."

And Shakspeare never uttered a truer sentiment. And it may here be remarked, incidently, that Mr. Shakspeare was generally about right in his observations of men.

The justness of the foregoing will be admitted at once; and yet who keeps his mouth clean?—who of all "the upper ten thousand?"—who of all these fine ladies and gentlemen?—who of all these "white sepulchers," who has not his mouth "full of dead men's bones and all uncleanness?" This beautiful lady, so immaculately clean, (in her own conceit,) has, at this moment, between her teeth great slivers of putrified and putrifying hog and cow, that have been lodged there since day before yesterday. All the aromatics of a wholesale apothecary shop would not, my dear Miss, avail to smother up the *rank sweetness of thy words:* thy very speech has a smack that the kissing winds prate of.

Clean your mouth! Not once a week; not once a day; but every time you have taken food. What would be thought of you if you did not wash your face as often as it became dirty? Or, would you expect to be tolerated in decent society, if you let your finger-nails grow so unclean as to rot off? Ought you, then to be tolerated there, when you treat your teeth in a similar manner? Think of it. Make a note of it. Be advised, for instance, as follows:

As soon as you are up in the morning, take water and a toothbrush, and thoroughly *scour* your mouth, (including your teeth, of course). Immediately after every eating—even of the least thing—clean the teeth carefully with a quill toothpick; then draw between them, where they stand close together, a thread of very fine, strong silk, so as to remove every substance that may have become wedged between them; and, finally, brush them vigorously with clean water. As Martin Farquhar Tupper would express it,

> SHOW me a man or a woman that keepeth the mouth clean,
> And I will show thee a person of good breeding.

DENTAL COLLEGES AND HONORARY DEGREES.

We take it for granted, that the profession generally feel a great interest in the success of Dental Collegiate education. It is certainly through those institutions that dental science must receive its greatest development for good. We have now three institutions of this kind, which appear to be somewhat stable, and their success for the last few years, has been such as to impress on the profession, much of its present character.

So long as there are old and meritorious practitioners, who have entered the profession before their organization, it should be expected that occasionally such should receive the highest honors of the profession. This we regard as right and proper; and if the power thus granted them is judiciously exercised, none should complain. But we are reminded, that two other institutions of a like character, have been started, and from various circumstances, such as their location, etc., they necessarily had to discontinue their organization. We have been advised, that one of these, although "dead yet speaketh," and that its voice has again and again been heard in the form of an honorary degree, from *one* of its *former* Faculty.

Now, we regard as very doubtful, the propriety of this course. We can not, indeed, realize how this can be done—such institutions have, or should have, a Board of Trustees, and, that one man can well be the *Board of Trustees*, its President, and all the Faculty, is rather more than we can fathom.

We should like to see a diploma signed—John Jmith, D. D. S., Prof. of Operative Dentistry; John Smith, D. D. S., Prof. of Mechanical Dentistry; John Smith, D. D. S., Prof. of Anatomy; John Smith, D. D. S., Prof. of Chemistry; John Smith, D. D. S., Prof. of Pathology; John Smith, President of the Board of Trustees; and John Smith; Secretary of—conferring the title of D. D. S., on Elijah Smith, student.

This is said to be a fast age, and this, verily, appears to be the fastest *stage* of the age.

We hope, for the credit of the profession, and those engaged in it, that this is not so. Do you know any thing of the matter? Yours, truly, ONE OF THE PROFESSION.

[We have heard an *inkling* of it.—ED.]

THE PHILOSOPHY OF EXTRACTING TEETH BY ELECTRICITY! WITHOUT PAIN.

THE HUMAN BODY A GALVANIC BATTERY AND MAGNETEC TELEGRAPH.

By SAMUEL B. SMITH, Electrician, New York.

The brain is the positive pole of the human body, or the principal telegraph office. Let us call the brain, New York, and the jaw, etc., the different stations throughout the body.

In the human body there are two sets of nerves, the nerves of motion and those of sensation.

By the nerves of motion, the mind transmits its mandates from the brain, and moves those parts of the body where motion is required. By the nerves of sensation, pain or pleasure is transmitted to the brain. All this is effected by the vital fluid passing along the nerves, either from or to the brain, as the case may be. Now, as the brain is the principal telegraph office, there is a king who presides there. When he wants any thing done at any of the stations of his empire, he transmits his will down the *nerves of motion*, and his will is obeyed; for instance, he wants the hand to scratch the foot, and the foot is scratched. Then, again, if an enemy attack his empire, for instance, a tooth is being extracted, immediately the pain is transmitted along the nerve to the brain; the king takes cognizance of it, and acts accordingly.

Having now a pretty good knowledge of the use of the nerves, so far as connected with the subject under consideration, we shall examine the characteristics of the different magnetic machines now offered to the public, as an anæsthetic or alleviator of pain in the extracting of teeth.

The ordinary electro-magnetic machines give out only a to-and-fro current. The one invented by myself, and patented, is the ONLY ONE which gives out both the to-and-fro current, and a DIRECT CURRENT.

No To-and-fro current Magnetic Machine can prevent pain in the extracting of a tooth. None but a Direct Current can possibly do it. This, it now behooves me to prove.

First, then, a To-and-fro Current is a current which runs *backwards and forwards* like the pendulum of a clock. It has no specific POLAR action, because its poles change polarity every time the current is broken by the vibration of the spring.

The Direct Current runs *but one way*, like a river running down stream. There are several ways of proving the characteristic differences of these currents. I shall here mention but one, referring the reader, for further proof, to my "MEDICAL APPLICATION OF ELECTRO-MAGNETISM," pp. 89 and 90. Take, for instance, a solution of silver; into this place a piece of polished brass suspended on a wire from the negative pole of the Direct Current of my Magnetic Machine, and, suspend in the same solution, a piece of silver, say, a ten cent coin, on a wire from the positive pole, and, in a few minutes, it will be completely plated with silver. Perform the same experiment with a To-and-fro Current Machine, and no plating will be effected. (Try this experiment with the ordinary Magnetic Machines, and the truth will be discovered.)

Now, for the applying these facts to the pulling of teeth without pain:

Here is a Direct Current Magnetic Machine. The patient takes the positive pole of the instrument in his hand, the negative pole being in connection with the nerve of the tooth through the forceps, or some other way, or through a spring pressing on the nerve externally. The galvanic and electric current now passes up the arm and through the nerve of the tooth back to the battery. In its course it passes along the nerve ofsensation leading to the tooth, and thus prevents the pain of extracting, by preventing the nervous or vital fluid from reaching the brain. This may be illustrated as follows: Let the nerve be represented by a leaden tube, at one end of which is a reservoir of water being poured continually through the tube into the tooth. Let this water represent the electric current, which performs the functions of the nervous fluid. Under these circumstances no water could pass the contrary way at the same time. Such precisely, is the case with the direct electric current; consequently, no pain could reach the brain, as two POSITIVE electric currents can not pass along the same line, in different directions, at the same time. Neither can the nervous fluid pass from the tooth to the brain, so long as the electric current is passing along the same nerve in an opposite direction.

But with the To-and-fro Current there is an interval between the vibrations of the spring, or the break in the current, when the nervous force rushes to the brain and causes pain: the pendulum goes To-and-fro from the tooth to the brain, and back again. The monarch on his throne feels this pain, and shrieks. Not so with the DIRECT Current. He knows nothing of what is going on, except his eyes or his ears tell him, and then he don't believe them.

CASE OF AN ADULT NEVER FURNISHED WITH TEETH.

A negro man, aged about forty-five years, belonging to Col. W. H. H. of Claiborne county, Mississippi, with whom he has been during the last ten years, says that he never had any teeth.

I examined his mouth a few days ago, and found the alveolar ridges less developed, and the gums over them, not much, if any, firmer than is common with edentated persons; but the inferior alveclus, although very low, is broader than usual, and meets the superior very fairly for a considerable part of its anterior portion, enabling its possessor, as he says, (which is confirmed by others), to masticate readily any kind of food, even crust of bread. But he ought, undoubtedly, to adopt the first bill of fare, recorded—Genesis, first chapter, 26th verse,—and eschew all animal food.

His face presents a singular shortened appearance, and he keeps his inferior maxillary in motion a great part of the time. He is healthy; and I have no doubt of the truth of the report as to his want of teeth.

Jan. 24, 1859. A. Berry, D. D. S.

Editorial.

THE AMERICAN JOURNAL.

The *American Journal* has two grave objections to controversy; first, because there is danger of becoming involved in "endless and unprofitable controvery;" second, because the majority of readers have the opportunity to read but one side of the question, which is not always satisfactory. The *grave* reasons are good. He has also one which he considers "graver," the import of which seems to be that he has more water in him than any of those whom he is likely to meet in combat. We do not know how else he applies his quotation from the "Autocrat," which is as follows:

> "If a fellow attacked my opinions in print, would I reply? Not I. Do you think I don't understand what my friend, the Professor, long ago called *the hydrostatic paradox of controversy?* Don't know what that means? Well, I will tell you. You know, that, if you had a bent tube, one arm of which was the size of a pipe-stem, and the other big enough to hold the ocean, water would stand at the same height in the one as in the other. Controversy equalizes fools and wise men in the same way—*and the fools know it.*"

The "Journal" objects to controversy, because it does not choose *to put himself on a level* with every individual of a certain class. He *knew* his position was correct—that the tendency is to *level*, but, lest others might doubt its validity, he quotes the "Autocrat" to prove it, and as his authority, in speaking of this leveling tendency, says, "*the fools know it.*" We infer that we have found the "Autocrat" fool, self-confessed, in the editor of the "Journal." But, as we are "candid" now, we presume the confession is another "slip of a too hurried pen."

But it is perhaps, "natural for those who sojourn so near to the *broad Atlantic*, to boast of their "water privileges" and to regard all others as the necessary patrons of "horse power" and hand-mills. But we advise all such to be reasonable in their assumptions, lest the stump-orator's threat be put in execution. "Who keers," says he, "for the mistress of the ocean? Aren't we the masters of it? There wouldn't have been any ocean if it hadn't been for the old Mississippi. And if we dig a ragin' canawl and turn that big drink into the mammoth cave, then wars your ocean? *It'll bile dry, sir.*"

The editor objects to what he terms our "scurrilous personalities" in a former article. We beg his and the reader's pardon for using them; and to show that we have reformed, under the influence of the courteous and chaste example he has set us in his present article, we will not call him a "scribbler," nor charge him with dishonorable notoriety, nor speak of his "chemical quackery" (unless we want to), nor allude to his fund of ignorance," nor say that he is not a chemist, nor write a great many phrases which would be "scurrilous" if we used them, but which are chaste and gentlemanly when used by the editor of the Journal.

But the editor says we charged him with *jealousy*. His memory is bad. We defended him against the charge, and claimed that he was actuated by the purest motives, and impelled by stern necessity, as will appear by reference to our article, Vol. XI, p. 465, of the "Register."

The editor's worst objections to us, as we infer from his emphatic repetition of it, is that we are not acquainted with Bischoff. He might pardon our other sins, on due repentance and reformation, but that one he can not forgive. The charge, we admit, is a serious one, but we are gratified to think that the two unsettled questions now pertain to chemistry. "Who struck Billy Patterson" is ruled out, for the "rappers," by disquieting his spirit, have learned that he never was struck; and the questions are now, "will saltpetre explode?" and do you know Bischoff?"

"In the last paragraph but one of" the editor's "article we have the extorted confession that" cane sugar is not the only variety used in food; and we would not have noticed this "slip of a too hurried pen," if the editor had not ignored the fact that by the first step in fermentation, cane sugar is changed to fruit sugar.

The editor brings "these solemn exercises" to a close with this sad and sensible paragraph:

"It is not likely that we will soon again step out of our way to notice W. He attracted our attention in the first instance by meddling with things above his comprehension. We should not then have noticed him publicly, were it not that his chemical crudities were paraded as a part of the proceedings of one of our societies, that we suspected they would be reproduced in Europe, and that we anticipated a storm of ridicule which would fall not upon him, but upon the whole dental profession in America. To avert this by showing the world they were not received here, was the sole object of our first article. *Ne sutor ultra crepidam* is a sensible old adage, which would save much trouble if generally acted on, and which we commend to W's serious consideration."

Not likely soon to notice us again! Now, doctor, that's cruel. We ought to be intimate; for there is a bit of romance connected with our earliest acquaintance. The editor says of us, "He attracted our attention, in the first instance, by meddling with things above his comprehension." Now, that attraction was reciprocated, and from like causes. ' 'We had no consciousness of his (the editor's) existence, till his chemical quackery" induced him to *attempt* to write a *dental* chemistry, without any practical knowledge of the wants of the dental profession; and we should not thus notice the fact "were it not that his chemical crudities" are "paraded as a part of" the literature of the profession. Our early unconsciousness of the editors existence is *meaner*, we know, than our present non-acquaintance with Bischoff, but as we were young then we hope to be forgiven.

The editor's apology for getting into the big arm of the "Autocrat's" bent tube, while we were in the little one, is frank and satisfactory. He was afraid our ideas would get across to Europe, and the whole profession in America would be overwhelmed with a storm of ridicule. Gracious man! he averted "this by showing the world that they were not received here." By the term world we suppose he means the few hundreds who read the "Journal"; and he showed these few *he* didn't receive them. That is all it amounts to,—but, simple as it is, it averted a storm more fierce and fearful than that one we read of

"When the blue waves rolled nightly on the deep Galilee."

Verily, Professor Espy is no longer THE storm King.

Doctor, couldn't you establish branch offices at the other Atlantic ports? Some "crudities" may ship for Europe at other points, knowing that you are on the watch, at Baltimore to arrest them as fillibusters.

"*Ne sutor ultra crepidam*" is a sensible old adage——which we commend to the editor's "serious consideration." If this teaches that a *cobbler* should not get beyond his *last*, let us enquire which one of us has *stuck to his own last* the most faithfully. The Junior editor of the "Journal" is Professor of *anatomy and physiology*, in the Dental College at Baltimore, and formerly held the *same* chair in a Medical College. He left *his own last* and tried cobbling on that of a special chemist. It is not strange that the job, when finished, failed to fit the foot of the profession it was made for. On the other hand, we were selected, by the unanimous vote of one of the largest dental associations in the world, to teach DENTAL *Chemistry*, in the first building ever erected expressly for dental education, and we have never spoken or written any thing on *dental* chemistry, but at the request of some of our constituents or pupils.

We have stuck to our last, and are ready to resign it as soon as our patron can find a *cobbler* that will better answer her purpose.

Near the close of his article the editor exhibits a decided streak of frail humanity. When relieved of any ill which flesh inherits, the patient is loud in his praises of the remedy and its inventor. Hence we have numerous certificates of marvelous cures. As a race, we are all in search of something "to cure our ignorance;" and the editor, having obtained at least partial relief, is naturally anxious that all his friends should come to the same physician and be healed, hence he earnestly intreats us to call on an "apothecary's boy." We'll do it; for though the cure is but partial in his case, yet, considering how low the patient had sunk, we consider the success a triumph of science and skill. We would like to call on the same boy, if the editor would give us his address.

As we can find nothing new in the editor's objections to our views of the chemistry of caries, our readers will excuse us for neglecting to re-answer old ones. In the mean time, we will go on with our chemical investigations; and when we have any thing deemed worthy of notice, our readers, as usual, will hear from us. We would simply state that in all these remarks, concerning the editor of the "Journal," it is the JUNIOR who is referred to. We have too much respect for Professor Harris' age and talents to write in this style of levity concerning him; and he has too much respect for himself to do or say any thing that would call for such notice.

VULCANITE BASE.

This style of work, though it has been used some two or three years East, has not, till very recently, attracted much attention in this city. Quite a number are now experimenting with it, with a view of ascertaining to what extent it is available as a base for artificial teeth. What will be the result, time only can determine. For the most part, where it has been longest used, the report is very favorable. Occasionally failures have been reported, but upon what conditions or circumstances they were predicated, is not definitely set forth. We have seen a number of pieces that have been worn in the mouth for two years, without undergoing any apparent change whatever. Indeed, we have yet to see a piece that has suffered any change in the mouth. Its durability is the great point to be tested; there is some objection to its color, but that is of minor importance, and scarcely enters into the account at all, when gum teeth or blocks are used. Its color is no more objectionable than that of gold. There are several things that recommend it very much; the perfect accuracy of adaptation; if the model is accurate, the fit of the plate will be perfect, without a possibility of a mistake. The base is formed, and vulcanized, on the model, and there is no expansion or contraction. It is very light, the weight being much less than any other style of work, and that in some cases it is an important consideration, and it is not objectionable in any case. With it all the strength necessary for any case can be obtained. There is no metallic work in which the teeth are more firmly retained; if they are properly set, there is no possibility of them being displaced by ordinary usage. In falling, and striking any hard substance, there is less liability of breaking the teeth, than with the metallic base. There are no openings or interstices in it for the lodgment of foreign substances; it is as perfect in this respect as continuous gum work; than which we could scarcely desire any thing better.

The general expression of those who have tested both, is that it is much more pleasant and congenial in the mouth than any metallic plate.

It can be worn in the mouth with any metal that it is proper to put into the mouth, either in the form of fillings or plate.

It is not affected by mercurials, as most metallic plates are, especially gold and silver. Our experience is rather limited, not extending over six weeks.

The first case was a full set, for a gentleman who had worn a silver set for two months, being very much annoyed thereby; in consequence of oxydation of the plates, they would become perfectly black in twenty-four hours, and were almost intolerable, giving a metallic taste constantly.

A set on vulcanite base has been used now for several weeks with great comfort. There is not the least taste or odor, though they have been worn for four days, without being taken out of the mouth. There is not that metallic sound, by the occlusion of the jaws, experienced with other work.

Another full set, temporary, put in four days after the teeth were removed, are worn with comfort, much more than the patient expected. There is no taste or odor.

Another, a full upper set, inserted instead of a gold set, that had been worn in connection with a partial under set, on cheoplastic base, in consequence of which there had been a constant offensive odor and taste in the mouth.

The vulcanite set is worn instead of the gold, and without any taste or odor, and the food is masticated quite as well as with the gold set.

This style of work should be thoroughly tried by all the progressive part of the profession. It will, doubtless, answer well in all cases of temporary work, and, we think, promises more than this.

Please test it and send us your experience, especially in regard to indestructibility. T.

SOMETHING NEW.

We have, within the last day or two, witnessed something novel in the way of mounting sets of teeth. It consists in a method of mounting and attaching the teeth to the plate, after it is swaged and fitted in the usual manner, without soldering, and without the ordinary backings, yet with a beautiful continuous lining, that fits as perfectly to the teeth as though it was cast, is perfectly smooth, and better finished than any ordinary backings can be. Can be made to take any desired form. The attachment is a metallic union, and yet is without heat that will affect the plate, consequently, there can be no springing. It can be done with gold or silver. All interstices are perfectly closed. It is accomplished in much less time than the ordinary work, is more beautiful, and seems to be firmer. The attachment is with pure gold, or gold of any desired carat, or silv. We have no experience with this kind of work, but intend to experiment with it as soon as opportunity affords. We speak of the work as we have seen it, and as it was described to us.

We can not see why the work is not all that is claimed for it. Time will develope more in regard to it. T.

PAINLESS SURGERY.

Dr. Livingston, the celebrated African traveler, states that when torn by a lion he felt no pain. Was it because the wounds inflicted were trivial? Certainly not; for the shoulder was crushed, and the humerus fractured so severely that a false joint is the result. Then think of the contused and punctured wounds inflicted by the jaws and teeth of the animal. He was not in a state of stupor bordering on coma; for he was able to observe minutely the actions of the lion, and to notice all the surrounding circumstances. He was not, probably, laboring under a state of depressed nervous action, for his energies were aroused, and he was the aggressor in the fight. Had he been fully under the influence of ether or chloroform, we would not be surprised to hear that he was unconscious of pain during the onslaught of the lion; but all the circumstances warrant the belief that his nervous system was in a very different, if not in the very opposite condition to that produced by chloroform.

But after all, is there any thing very uncommon in Dr. L.'s exemption from pain under such circumstances? In battles, mobs, or street fights, do not many receive severe wounds of which they are not conscious at the time? or if conscious, do they not fight on, without a sense of pain, even when disabled by fracture or loss of blood? Does not every rollicking school-boy know that when "fighting mad," a sound drubbing hurts him far less than when under a calmer mental condition?

Now, if we could devise a convenient method of rousing the nervous system up to the painless point, we would like it much better than the plan of depressing it, by anaesthetics, below the point of feeling. And if we could act successfully on only those nerves concerned, in any given operation, the result would be as satisfactory as if the whole nervous system were thus influenced. And something like this, we believe is accomplished by the use of a galvanic current in the extraction of teeth. It is needless to deny that, in many cases, the pain of the operation is very much lessened, if not totally abated; and we know of no better method of accounting for the fact than by the hypothesis above suggested. In short, we believe that the dental nerves, during a successful application of the battery, are in the same condition that Dr. Livingston's were when the lion had him. W.

"THE LEGS OF THE LAME ARE NOT EQUAL,"

Therefore, they are to be excused if they limp. The *American Journal*, on the same principle, is not to be held responsible for its flimsy explanation of its conduct in regard to the report of the proceedings of the Convention at Cincinnati. The lame man walks as well as he can, and the *Journal*, probably, gave the best excuse it had.

The editors call their report "a summary, furnished by a member, made up partly from recollection, and partly from advance sheets of the *Register*, and, we believe, of the *Reporter*, which he obtained."

As neither of the editors was at the meeting, they are excusable for *believing* any thing. But those present *know* that the gentleman who furnished their report, "obtained" no *Reporter*, and made no effort toward a systematic report himself. Everybody knows that his "recollection" would amount to but little without systematic notes; and as his report is only a *garbled, mutilated* copy of that which belonged, in common, to the *News Letter* and the *Register*, the public can judge of the *Journal's* candor. As the editors "saw no other report till all the forms but one of the *Journal* were printed," it is probable that they were hoaxed, and supposed they had an *original report* instead of a purloined and mutilated *copy*. But why, then, defend their own course and that of their reporter? W.

A GAS EXPLOSION.

It is a commonly received opinion, that flame will not penetrate wire gauze or a tube having a small diameter. There is evidently some foundation for this belief, as the practical use of the "safety lamp" in mines will testify. But it is probable that far too much reliance may be placed in these appliances. Hemming's safety-tube is sometimes used to prevent the flame from reaching the reservoir of mixed gases, when experimenting with oxygen and hydrogen. This tube is made by filling a plain brass tube with fine wire, and wedging it tightly together, by forcing in a larger wire of a conical shape. A blowpipe point may then be attached to one end of it.

But we set out to tell the result of an experiment.

About a quart of oxygen and hydrogen, mixed in the proportions to form water, was contained in an elastic gas-bag. The bag was armed with a stop-cock, to which was connected a brass pipe five inches long, and a half inch in diameter. To this, an India-rubber tube, thirty inches long, was attached; and a safety tube, eight inches in length, with a very small orifice, terminated the apparatus.

The stop-cock was turned, and, by the pressure of the hand, the gas was forced out, and a match applied to the jet. While the gas was burning freely, the hand was gently raised, so as to reverse the current, and instantly a deafening explosion took place. We have no comments to make. W.

Of Nature and Art in the Cure of Disease. By Sir John Forbes, M. D., etc.

Who that has read Dickens' story of Bleak House, does not remember Turveydrop, the high-shouldered Model of Deportment? Well, Turveydrop has turned author, and written a book entitled as above. And a downright good book it is, too. The matter of it is excellent. Turveydrop undertakes to assert, in his high way, that the world is doctored to death. We confess, if we comprehend his genteel rhetoric, that we think so too. All the systems of medicine he says, have failed of their object. We subscribe—unless, indeed, their object has been to obviate a density of population. Nature, we understand him to intend to say, is the best physician in the world. We homologate. He recommends, if we are not mistaken, less medication and more reliance on the curative powers of the aforesaid physician. We indorse. In fine, and in earnest, Sir J. Forbes' book appears to be a reluctant confession, in very wordy, prolix, and pedantic diction, of an old doctor's disgust with doctoring and doctor-stuff. The book contains several wholesome truths—and several thousand words. Indeed, there is too much language in the volume, by half. No doubt, Sir J. Forbes has a confused notion of some aim he is driving at, but Sir J. Forbes never makes any center-shots at all. He may be talking at a mark, but he never talks *to* it. There is a wandering, wool-gathering, circumlocutory booziness in his style, as if Sir J. Forbes had had "a brick in his hat;" though, for the credit of the profession, we do not believe he had. By the masses, for whom we suppose it is mainly intended, the book will not be read any more than so much Choctaw; and as for the profession, Sir J. Forbes has demonstrated that they are not to be redeemed by books. In conclusion, we would recommend some glib, direct, democratic Yankee to take Sir J. Forbes' "little book and eat it up," and digest it into a fifty-page Tract for the People. We have the work from Rickey, Mallory & Co., Cincinnati.

Mind and Matter: or, Physiological Inquiries. In a Series of Essays, intended to illustrate the Mental Relations of the Physical Organization and the Physical Faculties. By Sir Benjamin Brodie, Bart., etc.

Dear reader, you have known talkers in whose fascinations you were held like the little bird in the charm of the snake. And so you have found talking books, that laid hold of you, and held you down, and would not let you go. This little volume is one of them. The style is most captivating in its chatty ease—running along as limpidly as a trout-brook through a summer meadow. There is no pretension in these pages; yet they are as full of "Mind and Matter" as a hive is of honey. The discussion—for the book takes the form of a pleasant conversation among three most capital friends—really adopts the metaphysics, though it ignores the technics of phrenology, and ranges through the whole wide field of anthropology. It is a book that is pleasant to read and good to study. We are indebted for a copy of the work to Rickey, Mallory & Co., Cincinnati.

MISSISSIPPI VALLEY ASSOCIATION

The late meeting of this Association was, in some respects, more interesting than any one held for some years. The attendance was not so general as we have seen it. The effects of the flood on railroad traveling, no doubt, kept many away. But those who were present threw off all restraint, and went at business like brothers. Very few long speeches were made. None spoke merely to hear themselves talk; but each one seemed anxious to gain all possible information in regard to professional science. The first meeting of this Association which we attended, was in the fall of 1852—its first meeting after we became fully identified with the dental profession—and we have been at all its meetings since, and we believe that this old society has done more for our advancement in professional knowledge, than any other agency. And now, brethren, shall this pioneer association have a full meeting next year? W.

CLOSE OF THE COLLEGE SESSION.

The commencement exercises of Ohio College were held in the large lecture room of the college building, which was filled to its utmost capacity. The addresses delivered on the occasion will be found in the present number of the *Register*. The names of the graduates are embodied in the minutes of the College Association. Every thing connected with the closing exercises, as well as with the meetings of the different associations, passed off pleasantly. W.

CHANGE OF PROPRIETORSHIP.

Since the issue of the last No., I have, for various reasons, thought best to transfer the proprietorship and publication of the *Register* to other hands. J. T. Toland is now the publisher and proprietor of the *Dental Register*.

He has all back accounts, and it would, no doubt, be very pleasant to him to have them all liquidated immediately. The editorial charge will remain as heretofore, and, we hope, with more care and attention.

We have still to say to the profession, however, that if they wish a good journal, they must give us their aid, in contributions from the pen.

All letters pertaining to the business, or financial department, should be addressed to J. T. Toland, No. 38 West Fourth St., Cincinnati.

All communications, papers and essays, for the *Register*, should be directed to the editors of the *Dental Register*, Cincinnati, O. J. TAFT.

CINCINNATI DENTAL ASSOCIATION.

We are happy to state the fact that there is, in this city, a local Dental Association, one that gives evidence of permanency. This we consider an important move, and one that "*omens*" good for the profession in our city. It was organized some seven month ago, and has been promptly attended throughout the winter, and gives promise of much good to those who attend and take part in its proceedings.

The officers are elected semi-annually, and are such as usually pertain to such organizations.

The meetings are held on the second Tuesday evening of each month, usually at the office of some member of the society. The discussions have thus far been of a thorough practical character; and at no meetings that we have ever attended, have we received so many practical items, in so short a time, as here.

Any numbers of the profession from abroad, who may be in the city on the second Tuesday evenings of any month, are most cordially invited to be present at the meetings and take part in the discussions.

In future we hope to have a synopsis of the proceedings for publication.

The next meeting will be held on the second Tuesday evening of April, at the office of Drs. Taylor & Erwin, No. 171 Race street.

Subjects for Discussion.—1st. Treatment of healthy pulps exposed by excavation, at a small orifice.

2d. Does living dentine possess recuperative power? T.

DENTAL FURNITURE.

Mr. M. Dolph, of this city, No. 148 Walnut street, has been engaged for several years in the manufacture of Dental Furniture, such as Instrument Cases, Chairs, Spittoons, etc., which for neatness and permanency, we have not seen excelled.

He has been engaged long enough in the business to know just what the profession need, and he is always ready to furnish it, at the lowest cash price. He sells for cash, and, consequently, lower than those who sell on time. He also makes any thing in the line of show cases, neat and cheap.

THE FORCEP,

A QUARTERLY JOURNAL DEVOTED TO THE ADVANCEMENT OF

DENTAL SCIENCE.

Vol. I. **January.** 1855 **No. I.**

ARTICLE I.

[For The Forcep.]

SALIVARY CALCULUS.

BY A. C. CASTLE, M. D.

The collection of *Sailvary Calculus* or "tartar" has, in common with the teeth, of late years, received a large share of practical attention, but not to that extent which it demands. It has indeed been the subject of many theories, some quite humorous, and others deserving respect. Some have supposed it to be exhaled from the substance of the gums, others think that it is built up by animaculæ, similar to "*coral* reefs," and numerous members of the dental profession ascribe it to the absence of "cleanliness."

Salivary calculus, I opine, occupies, or rather its element's occupy a more important position and influence upon the system, than, from its apparent insignificance, has been supposed. Several excellent "Treatises on the Teeth" confirm the physiological view which I have taken upon this subject.

It is computed that from twenty-four to twenty-eight pounds of saliva, *in quantity*, is secreted every twenty-four hours. Its elements or constituent principles in health constitute mucilage, albumen, phosphate and oxalate of Lime, and phosphate of ammonia and magnesia. In disease the saliva is acidified, especially in aphthous children, in mothers, *nursing*, and phthisical subjects, or when suffering from gastric affections.

Enderlin's researches yield the following results in regard to the constituents of the saliva, and which forms the basis of *salivary calculus :*

The constituents of calivary ealculus soluble in Water	
Tribasic phosphate soda (3 Na O, P O 5(,	28,122
Chlorides of sodium and potassium, 5,	61.930
Sulphate of soda,	2.315
Constituents insoluble in Water.	
Phosphate of Lime,	
" Magnesia,	
" peroxide of iron,	6,509
Loss,	2.124

Ashee of Human Blood (Berzelius.)	
Tribasic phosphate soda	12.1
Chloride sodium,	54.769
" potassium,	4.416
Sulphate soda,	2.461
Phosphate of lime,	3,636
" " magnesia,	0,769
Oxide of iron, with phosphate of Iron,	10.77

"*Fæces of Adulti*," (Berzelius.)

Chloride sodium, and alkaline sulphates,	1.367	4,000 soluble salts.
Tribasic phosphate of soda,	2.633	
Phosphate of lime and magnesia,	80.373	94.923 insoluble salts.
Sulphate of lime,	4.530	
Phosphate of peroxide of iron,	2.090	
Silica,	7,940	

"*Pulmonary mucus*." (Nasse.)

Water,	955.320	Sulphate soda,	6.460
Solid residue,	44.480	Carbonate soda,	0.198
Mucin,	22.750	Phosphate soda,	0.080
Albumen,	1 004	Phosphate potash, with traces of iron,	0.974
Water extract,	8.006		
Alcohol extract,	1,810	Carbonate potash,	0.291
Fat,	2,867	Silica and sulphate of potash,	0.555
Chloride sodium,	5.825		

From the analysis of saliva *Enderlin* conceives that saliva enters largely into the chemistry of digestion and in the formation of the blood. In its normal state saliva is alkaline and gives off ammonia, but the secretion of the mucus of the mouth, under other circumstances, is acid. The evaporation of a drop of saliva gives rise to a beautiful crystalline arrangement,similar in form to hydrochlorate of ammonia.

I look upon *salivary calculus*, in all respects, as being analogus to *urinary* calculus. It partakes of all the physical appearances, consistence, mottled strata, hardness, softness, friableness, &c., &c., presented in the various calculi of the urinary organs. It is generally deposited upon those teeth of imperfect combinations of their constituents, and rarely, if ever upon those teeth (if we except during sickness, of a *sediment*, as it were, upon the inside of the teeth after "indisposition") perfectly onganized, and belonging to a sound, healthy constitution. When it is present in such cases, a semicircular line of calculus is discovered immediately under the edges of the gums, encircling the neck of the teeth; in form it is like an inverted crescent upon the edge of the enamel, where it blends with the external lamina of the bone of the tooth. It is a very dense and exceedingly hard concretion, requiring considerable force to remove it from the teeth, and fractures with a sharp clicking sound. I conceive this formation of tartar to be more destructive to the alveoli than any other. It gradually insinuates itself down the fang of the tooth, and in many cases I have seen that it has destroyed or rather severed the nerve at its entrance to the foramen of the tooth at the apex of the fang, which it has entirely closed, and of course has destroyed the aperture through which the internal vital membrane passed into the dental chamber. The dento-alveolar periosteum being pushed away and destroyed, carrying by absorption the alveoli with it, the teeth, in a perfectly sound state, fall from their positions. So hard is this concretion upon the fangs as to require the removal of a portion of the surface of the bone, to relieve it from its embrace. Microscopic examination discovers that this calculus exists in a crystaline state, and by its irritating effects frequently causes what are supposed to be neuralgic pains.

The next form of salivary calculus is of a soft, friable, pulverant nature. It is of two kinds, the simple *phosphate of lime*, and the *ammoniaco-magnesia phosphate of lime*, with the usual combinations of animal matter; and *oxa* *late of lime* upon investigation will be found to exist in large quantities in those subjects where the oxalates exist in excess.

We find it deposited on the teeth* and not upon the flesh, but upon such substances as answer the analagous purpose of the nuclei in the bladder for the deposition of calculus on them. Salivary calculus is found deposited on artificial bone or porcelain teeth, on the silver or gold plates, and also on the dead fangs of teeth; but the absorbing process which removes the useless bone uncovered by flesh, prevents its deposition on exposed alveoli. It sometimes is found in the *Whartonian duct* in one form of *ranula.* Salivary calculus has been extirpated from this duct as large as a hazel nut; and a hog's bristle, in the case of a shoemaker, presented to the Anatomical Society in Paris, by M. Robert, exhibited the nucleous for the formation of the calculus attached to or embracing it.

It is generally deposited, as I have heretofore mentioned, upon those teeth of imperfect combinations of their constituents, and rarely, if ever, if we except a sediment thrown down consequent upon the abnormal secretions, superinduced by ordinary "indisposition," or in larger collections in the confirmed diseased. Disease, as particularly perceived in *phthisis pulmonalis,* increasing the exhalation of acid and alkaline matter, their combination precipitates and forms these concretions or a corroding acidified matter upon the teeth according to theone most in *excess*, and which is not to be seen upon teeth of a healthy constitution and habits, where the healthy secretions are preserved. It collects in great quantities in strumous and rickety children, and from the readiness of the saliva to become putrid, we find the acidified matter eating into and destroying the teeth. In aphthous and teething children, this is a great cause of local and constitutional irritation, and I have no doubt that it is one cause of the bronchial irritation and sympathetic cough superinduced by the immense quantity of glairy mucus exhaled from the bronchial cells consequent upon a sub-inflammatory action, either from a metastasis of action, or physiological cause as we daily observe in extensive superficial burns. In mothers of strumous diathesis, whilst nursing, tartar accumulates in large quantities, or canker sores afflict the mouth, and a filthy, acrid, corroding, green acidified matter occupies the place of the tartar, which "eats" into the enamel and bone of the teeth, which renders them so exquisitely painful as to be nearly useless for their intended purposes.

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*The deposition of tartar is frequently found on the teeth of one side of the mouth only, whilst on the other the teeth are clear and perfectly free. It will be found in such cases that the individual is in the habit of masticating the food on the one side thus, in a measure naturally cleansing them.

In the increased secretion of saliva in teething children, who shall say that the "dribblings," by which it is generally known, and which are considered by the nurse as a good "sign," do not discharge an important office in conveying to the absorbents and secretive powers the quota of lime so necessary to the formation of the teeth? The substance of the buccal mucus membrane, developing, as it does, the large and numerous openings into its substance, its close contact, and identifying itself so intimately with the *alveolo-dental periosteum*, which originally formed the sacs containing the germs of the teeth, the absorbtion, then, of the lime I think may be accounted for and the absence of salivary calculus, upon the teeth of healthy children, and its presence upon those whose secretive powers are injured by trashy, indigestive *unnecessaries* with which maternal fondness crams their progeny —thus irritating and destroying the healthy activity of the lymphatic system. Daily may be seen, upon the dissecting table, infantile, and other subjects, which had been of strumous diathesis, with limy concretions in the substance of the lungs, the liver, and in two instances I have seen them in the spleen, and in the bladder, which no doubt are here deposited, in the hurry, as it were, of the system, or the *vis vitæ* and *vis medicatrix naturæ*, exerting their influences to get rid of the superabundance of lime, now refused, although necessary to the several disordered systems of the animal economy; or the surcharged particles, not being able through their proper organs, to make their healthy required deposites, seek an exit by other channels and, as I have shown, enter into chemical combinations and depositions. In adults where the teeth are deficient in lime, this peculiar characteristic presents itself. The absorbents of the gums and teeth are more active, as if they were endeavoring to take up the lime deposited upon them. In old age, salivary calculus is deposited in immense quantities, the animal economy no longer requiring the usual supply of lime but on the contrary it is its constant endeavor to get rid of the superabundance. Hence, "grave" complaints, stone in the bladder, loss of hair, dry pinched nails, ossification of the heart and arteries, depositions inthe joints and partial ossification, a calculus deposition, of portions of the ligaments, and the irritations of all the large excretory and vital exhalant organs, are as much consequent upon this exciting cause, as pouring out of surcharged bile will cause biliary "complaints," and as other organs being either surcharged or deficient in their secretions and excretions, have their several influences upon the general system. That the lime is necessary to the animal economy, does not require my aid to establish. That its continuous supply is necessary to the formation, continuation and permanency of the bones, other portions of the "system," falls under our daily observation. I have had opportunities of observing many illustrations of the deprivation of lime to the animal system. The most amusing illustration of the want of lime and the effects of its presence, if I may be permitted to digress, came under my notice on my voyage from South America, to "sunny France." We had omitted to procure gravel for the poultry, and in a few days after we were "at sea," the poultry began to droop and wound up their afflictions with the "pip," or as the sailors termed it, the "scurvy." Their feathers fell from their bodies, and it was perfectly ludicrous to see the numerous *un*feathery tribe in the most profound misery, moping away their time in an utter state of nudity. Amusing myself one day by fishing up "gulf weed," which floated in immense "fields" upon the surface of the ocean, I shook from it numerous small crabs, about the size of a pea. The poultry, with one accord, roused themselves from their torpor, and seemingly, as if by instinct aware of the therapeutic qualities of these interesting animals, they partook of them with greater avidity than any invalid ever swallowed the "waters" at the "springs." After a few hours the excellence of the remedy was apparent; the "roosters" began to crow, the hens to strut and look saucy. Taking the hint I burnt some bones and mixed them with their food, and in a few days they all appeared in quite a holiday suit of feathers, derived from the lime of the bones, and that forming a constituent part of the crab shells.—In regard to the density of the teeth, it may be summed up in the comparison, that as the feather of the chick is to the feather of the fowl (the change of which being analagous to dentition with the chick,) so are the deciduous to that of the permanent teeth in children. It is a singular fact that "moulting," is of similar physiological phenomena to teething, and this dentition of birds is equally *fatal* to them, if not more so, as is teething to children.

ARTICLE II.

Method of Avoiding the WARPING or SPRINGING of Metallic plates in the process of soldering full sets of Teeth.

The frequent and vexatious *failures* in this important operation, render it very desirable with the mechanical Dentist, to have a process easy of execution, by which these failures may be always avoided; and the following plan has been so long and so successfully tried as to render its entire success unquestionable.

When the piece of work is ready for soldering, take three parts of well washed sand and one part of calcined plaster, mixed together in a dry state and kept in a box for daily use, and wet them to the condition of a paste, with which the plate and its arrangement of teeth are to be covered in the following manner. Place a sufficient quantity of the above named paste upon a piece cf paper on a flat surface, and set the piece of work upon it, pressing it down into the wet mass until the metal comes almost, but not quite in contact with the paper. Then bring up the mortar against the fronts of the teeth and over their ends or points the thickness of one third of an inch, also upon the metal plate to the depth of half an inch, excepting where the solder is to flow. When this has been carefully done, in such manner that the teeth and plate are covered equally to the depth prescribed, take a strip of platina plate one fourth of an inch broad, and as thick as ordinary plate used for full sets, long enough to emprace the outer circumference of the mortar or mixture of plaster and sand, and adjust it in contact with the same. This platina band must be provided with three hooks of the same metal, one inch in length, and soldered to the band so that when bent they may rest upon the plaster that covers the end of the teeth. One of these hooks should be in the center, or front, and one within half an inch of each end of the band, and both the band and the hooks may be covered with a thin coating of the mortar to keep the whole in place. Let the mortar then be trimmed to a uniform thickness, in order that the heat used in soldering may be equally diffused as it approaches the plate and teeth. Let the plaster set perfectly, and the whole be ready to be placed upon a bed of charcoal in a soldering cup, ready to be heated. In order that the heat may be applied both steadily and progressively, the bottom of the sheet-iron soldering cup should be perforated with holes like a cullender, each hole of the diameter of a large pea. Place this cup, containing the work to be soldered, over a fire of live coals, either anthracite or charcoal, and let the coal within the cup remain ignited over a gentle draft, until the work resting upon it is heated almost to redness, when the blast of the blowpipe may be applied and the work completed. Suction sets heated in this manner will fit the mouth as exactly after soldering as before, providing all particulars of the process be honestly observed.

Rationale of the process. I. The small quantity of plaster employed, compared with the sand, avoids the great expansion and contraction which unavoidably takes place when much plaster is used, inasmuch as the water absorbed by the plaster, is all driven off by the heat.

II. The particles of pure sand, or silex, suffer very little expansion or contraction by the heat employed in soldering.

III. The *gradual application* of the heat, implied in the foregoing description, causes all parts of the metal to expand and contract together, without any violent effect upon any particular part.

IV. The *equable manner* in which the mortar is spread on the surface of the metalic plate, has some influence on the fortunate result.

V. The *purity of the sand*, or the absence of all kinds of foreign matter, is essential to the perfect success of this process,—therefore, wash the sand.

ARTICLE III.

CRYSTALIZED GOLD.

For the benefit of our Professional Brethren, wishing to use up their old fillings or scraps of foil, and try Chrystalized Gold, we give the following receipt:

Take of Gold one part, heat in crucible to a red heat, add six parts of crude mercury, (being careful not to inhale the fumes,) when cold rub in a mortar to amalgamate, place in a dish and heat to boiling water heat, let it stand three to four hours, eat out the mercury with dilute nitric acid, wash the residue with tepid water, being very careful not to break the crystals asunder, place it into a crucible and heat to nearly white heat. It is necessary to have it nearly to the point of melting to make it tough.

ARTICLE IV.

CONTINUOUS GUM.

In answer to the numerous inquiries addressed to us in reference to Continuous Gum work we publish the following answers, and should be pleased to have more light thrown on the subject.

Messrs. Editors:—In compliance with your request, I send you the following answers to the many inquiries which are made, with reference to my improved method of setting artificial teeth with continuous gum.

Q. Does the plate warp in fusing the gum upon the teeth and plate?

A. It does not warp, so as to prevent the plate from fitting, the same as it did before the gum was applied, if the work is properly done. In this respect the new method possesses a most decided advantage over the old.—The linear expansion and contraction of platina, (that being the plate usually employed,) when subjected to sudden transitions of heat and cold, is only about one half as great as that of eighteen carat gold, and the mineral compound which forms the gum, is made to accord in this respect with the plate, so that there is no undue contraction, either in the metal or the mineral; hence there is neither a warping of the plate, or cracking of the gum, in cooling, after fusion.

Q. Is it not heavier than ordinary gold work?

A. It is heavier than a set of gum or single teeth, but not more so than many cases of well made block-work, mounted on gold plates. A slight difference in weight, more or less, if the plate is perfectly fitted to the mouth, is not perceptible to the patient. A much more perfect fit can be obtained with platina, than ordinary gold plate, and when fitted is much less liable to change its form; as the heat does not act upon it as upon other metals.

Q. Does platina tarnish in the mouth?

A. No. It is in this respect, as free from tarnish as a pure gold plug.

Q. Does this style of work possess sufficient strength for mastication?

A. When properly done, it possess more strength than any other method now in use, with which I am acquainted. In this respect, it has stood the test in many cases, where block, and single teeth, after repeated trials, had failed.

Q. Should a tooth get broken, can it be repaired?

A. One or more teeth can be readily replaced, and the piece rendered as perfect as before.

Q. Does the gum change color in the mouth?

A. Not in the least. It stands as well as on block or gum teeth.

Q. Has it been sufficiently tested, as to decide with reference to its practical results.

A. It is now over four years since I have used it exclusively in my practice, and have confined my operations almost entirely to this branch of the profession, and I now look upon it with more confidence than at any former period. The difficulties that presented themselves in the early stages of this improvement, have been entirely overcome, and the most perfect practical results are now readily obtained, with unerring certainty. Would time and space permit, I could add the testimony of many eminent Dentists in this and other cities, whose experience in this respect tallies with my own.

J. ALLEN.

ARTICLE V.

GOLD FILINGS.

For the benefit of Dentists living at remote distances from gold refiners, desiring to work their filings into plate, we give the following receipt, said to be good.

Place the filings into a crucible and melt with sal soda, add nitre and roast several hours. Should it prove brittle, place the gold in a new crucible, and add 2 grs. lead to each dwt. gold and re-melt with nitre; pour into another new crucible and re-melt with nitre and a very small portion of borax. The crucibles being new, with the assistance of the nitre act as cupels and extract the lead and other impurities.

Note.—Liverpool, Cumberland, or other bituminous coal is preferable to anthracite. In case of the breaking of crucibles, it is more readily seperated from the gold and roasted out. Should this accident occur, roast out as much as possible by keeping your gold and cinders at the melting point several hours, let the mass cool to redness, add crude mercury, (being careful not to inhale the fumes,) rub up in a mortar; eat out with diluted nitric acid and re-melt.

ARTICLE VI.

FILES.

The New York Teeth Manufacturing Company being about to commence the manufacture of files for Dental purposes, having engaged superior European workmen for the purpose, solicit from the profession models of any new and useful patterns they may desire.

ARTICLE VII.

ALLEN VS. HUNTER.

In answer to numerous inquiries in regard to the above case, Dr. Allen has sent us the following communication:

The case of Allen *vs.* Hunter, in the Circuit Court of the United States, for the district of Ohio, for an infringement of Allen's patent, for setting mineral teeth, was continued at the last term of the Court on the following grounds, viz: First, that the plaintiff was taken by surprise when he was advised that Dr. Hunter denied that he had used, and was using, substantially, the improvement claimed by plaintiff. The plaintiff supposed from certain publications of defendant, that he would not deny that he had used the identical improvement claimed by Dr. Allen, but would rest his defence upon the want of originality on the part of the patentee; and it was not until after the commencement of the term of the court, that the plaintiff understood that the denial of the infringement, was the main ground of the defence. Therefore, upon that point, further proof was required. Second, an error had occurred in the taking of the deposition of Dr. James Robinson, of London, which would have rendered it inadmissible on trial. This testimtny was deemed important by plaintiff's counsel, who desired to have his deposition in a shape to be used on trial. Again, the defendant refers in his plea, to a work, in which, as he claims, the author describes a method of setting teeth, like that of Dr. Allen's. This notice was filed so shortly before the commencement of the term, that sufficient time was not allowed for plaintiff's counsel to get possession of, and examine the work referred to. Although, upon this point, counsel stated, that judging from the utter failure of a similar notice, in reference to other publications, there would have been on risk in going to trial. But he preferred examining the work before the trial was had.

ARTICLE VIII.

AMERICAN DENTISTS IN PARIS.

We clip the following paragraph now going the round of the press, and recommend it to the serious consideration of the younger members of the profession about to locate.

"Brewster has retired with a fortune; Evans and his brother turn over $30,000 a year; Horner has a salary of $10,000 from his senior partner, Stevens from England; Fowler is just beginning, the youngest man of them all, and the latest from America, where all the improvements are made. He has every chance of immediate and sustained success. These are remarkable facts, The dentists of the imperial families of France and Russia are Yankees. The dentist of Queen Victoria and her royal children is Edwin Saunders, a younger brother of Frederick Saunders, Assistant Clerk of the New York Common Council, but better known as author of "Salad for the solitary," and other works. We have also opportunities of hearing, directly and indirectly, from Dr. Chas. Rhan, formerly of Toronto, Canada, recently located in Grosvenor Square, London, and are happy to say his success is unprecedented, both professionally and in a pecuniary view. We will be enabled to present to our readers in a future number, communications from London and Paris upon the condition of Dental Science in the old world, as compared with this country.

ARTICLE IX.

MEETING OF DENTISTS,

TO CONSIDER THE EFFECTS OF ETHER AND CHLOROFORM ON THE HUMAN SYSTEM.

At 57 *Bond Street, December 4th,* 1854.

On motion, Dr. Solyman Brown was called to the Chair, and C. S. Putnam, Secretary.

The President announced that those present would be heard in alphabetical order, and first called the name of Allen.

Dr. J. Allen of 30 Bond St., rose and stated that he understood the object of the meeting was, to collect *facts* from gentlemen in the active practice of their profession, drawn from their actual experience and illustrative of the effects of the two great anæsthetic agents *ether* and *chloroform* upon the human system.

His observation had been limited, having administered it only in about twenty cases. He had always regarded it as a dangerous agent, and invariably represented to his patients that the insensibility thus produced was too much for so little. He had observed that the patient would frequently insist that the tooth was not out, and nothing but feeling the cavity or seeing the tooth, could convince them to the contrary.

In one case a patient called loud for Brandy and went to another room in search for it.

He also mentioned a case which fell under his notice in Cincinnati, of a married lady, who being in good health walked a mile and a half to have several teeth removed, while under the influence of Chloroform. Several were extracted and in a few minutes after, she died instantly in the operating chair.

Dr. Burras, of Oliver Street, remarked that he first tried it on a sister, as an experiment, not deeming it injurious. It speedily manifested its peculiar effect, and she placed her brother's hat on her head, put on his coat and nursed the Sofa Pillows on her lap, but completely forgot the whole on becoming rational. At the same time he tried it upon an aged lady, with a view to tranquilize her nervous system, and its effects were so delicious that she thought "every poor man should have a bottle of it." He also stated other cases, showing that his patients often formed erroneous impressions while under the influence of ether, which was difficult to divest themselves of after the effects had entirely passed off.

Dr. Barlow, 471 Hudson Street, had witnessed the use of ether in no less than fifteen hundred cases, and was in the habit of using it three or four times a week. He often had cases in which both sexes would say and do things, and act very differently from what they would in their ordinary condition; would divulge secrets or relate things unconsciously, yet, seemingly not so, at the moment, which they would not, on any account have known. An Irish woman supposed she had been in Ireland, and saw there her father, mother and friends. A lady who had recently been at Christy's Minstrels, exclaimed, "Oh, Dear George Christy, how I should like to kiss you." A gentleman who was fond of horses called for his whip, and placed himself in a position as though he was driving a fast nag.

Thought a woman under such circumstances might be honest and faithful in her statements, her impressions having all the force of realities.

Dr. Burdell, 31 Bond Street, had a case in point, corroborating the statements of the preceding speaker. A gentleman brought a lady to have a tooth removed. After the operation, she said "*now George, what did you kiss me for? You did kiss me! You took advantage of me.*" The Doctor observed that had the person supposed to be implicated been her husband or lover, and present, it would have been morally impossible to correct an erroneous impression, and hardly possible, even then. It was his decided conviction that ether was an active agent in exciting the reproductive organs.

Dr. Babcock, of New York, gave ether to a gentleman whose first impulse was to bolt through the window and fetch a bucket of water, to obey a supposed command. A Lady who had some domestic troubles, inquired for her child, and afterwards wished to know if she had made any imprudent remark.

Dr. Crane, of New York, had used these two agents in a few cases. He thought he saw danger in their indiscriminate use. Generally, if patients uttered anything, it was in reference to persons not present.

Dr. Castle, of New York, had not used ether for the last three years; was convinced of its injurious effects, and did not think that dentists, in general, should use it, on account of their *limited knowledge* of its *physiological* effects. He thought it acted powerfully on the pupil, an index of its action upon the nervous centres and the heart. Ladies of a plethoric habit, or of extreme nervous sensibility—those in whom excitement of the circulation is to be deprecated, especially where there is a disposition to Scrofulous Consumption, ought specially to be interdicted from its use. He was also satisfied of its influence in exciting the reproductive organs.

Dr. Crowell had witnessed the effects of ether in several hundred cases. Had often noticed that an erroneous impression, in the minds of his patients, might be formed of what did or did not transpire while thus etherized, which could not be effaced for months and years. He related two interesting cases in point. Nine years ago, a young lady called with her mother, to have a tooth removed. Soon after the operation, she angrily complained that he had rudely kissed her, and no assurance of her mother could convince her to the contrary. So thoroughly riveted is the impression, that on meeting her last summer, at Saratoga, and asking her if she had got rid of that foolish impression, replied, "O, that is nonsense. You know you did."

In another case the Lady insisted that she had been thrown upon the floor, and that the operators knees rested on her breast while he removed the tooth. He spoke of many similar delusions of mind, and was satisfied that no person fully under the influence of ether could afterwards relate with certainty what did or did not transpire.

J. G. Ambler was of the opinion that the effects of Chloroform were different from those produced by Ether, As to Chloroform, patients are insensible of what occurs, with ether, not necessarily so.

Mr. Dillingham, of Brooklyn, had a limited experience, but was satisfied of its general effects in producing hallucinations of the mind.

Mr. Francis had used, or seen Ether and Chloroform used, in at least four hundred cases. For one lady he removed seven teeth, but she imagined that he was operating for her child, of which she was constantly speaking. He also spoke of two well dressed females who called upon him professionally. One of them took chloroform, and while under its influence used language of the most ridiculous, profane, and even obscene description. When recovered she seemed perfectly unconscious of having uttered any improper expression, and apparently not accustomed to its use.

Mr. Guning said his experience was limited. Desired to know *who called the meeting.* Thought the movement rather hasty, &c., &c.,

Dr. Haslet, related a case of a young married lady, who, under the excitement of ether, caught him round the neck in the most endearing manner. He had witnessed several cases of females, who, on the recovery of consciousness, would seem to have a vague recollection of what had been their morbid impression, and frequently an erroneous idea would become more or less permanent,

Mr. Hurd, of Williamsburg, thought that in many instances, in his experience, impressions formed under the influence of ether, seemed as real as if it were really so ; and would continue the same in the mind afterwards unless circumstances proved to the contrary. At this point the word hallucination was discussed, and the sense of the meeting seemed to be that the morbid perception to which the word is applied is more *lasting*, as well as stronger, when produced by ether or chloroform than any other species of false impression.

Dr. Peck observed, that an idea presented as the Patient became affected, would continue through its action. Believed Dr. Beale innocent.

Other Gentlemen addressed the meeting, but our limited space precludes us from noticing their remarks.

WAX FOR IMPRESSIONS.

To toughen wax for Impressions, melt with one sixteenth to one eighth part Raw White Turpentine, according to the temperature of the weather.

ARTICLE X.

BOOK NOTICE.

We have received from Dr. T. D. Thompson, of Providence, Rhode Island, a beautifully executed volume, published by Messrs. E. B. Murphy & Co., of Boston, entitled "FACTS FOR THE PEOPLE, RELATING TO THE TEETH," *showing their influence upon the health, speech, and looks, with directions for their care and preservation.*

This work is a very judicious compilation, fitted for general circulation as well as professional reference, on the subject of the management of the teeth. Dr. Thomson, the Editor, is a graduate of the Baltimore College of Dental Surgery, an institution which has conferred lasting benefits on community by giving a thorough Dental education to many pupils from various parts of our country. Among these Dr. Thompson holds a highly reputable position, both as an operator and an author. As an operator he has already taken a favorable stand among the eminent Dentists of his adopted city. As an author, he lays no claim to originality, but has collected with skill and judgment, from the works ot others. The volume before us comprises 250 duodecimo pages, and several engraved illustrations of the various subjects. The work is well printed, on good paper, and is every way well worth the publishers price, 75 cents, either to the professional or non-professional reader. Copies may be ordered from the warehouse of the New York Teeth Manufacturing Company, 404 Broadway, New York.

ARTICLE XI.

CIRCULAR TO THE DENTAL PROFESSION.

Gentlemen :—The *Actuaries* of the "New York Teeth Manufacturing Company" issued a prospectus comprising the plans, purposes and "*Articles of Association*" of the chartered corporation of which they are superintendents, in the month of February last, and copies were forwarded to your address. We are now able to state that the Capital Stock of this Association has all been taken by responsible parties, and payment of installments has been made with such commendable punctuality, that the Treasury is in funds for future operations on an enlarged scale. Thus the cash foundation of the enterprise in which we are ardently engaged, is firmly established, even in this unprecedented period of commercial embarrassment and distress.

The Actuaries kept the subscription open to the members of the Dental profession for eight months, a period sufficient to allow those of the remotest sections of the country, to avail themselves of the evident advantages of membership. When this had been done, the remainder of the stock was sold to capitalists who clearly foresaw the ultimate profits of the investment.

Of the character and qualities of the teeth produced by this company, many gentlemen of the profession have already expressed their opinion over their respective signatures, as may be seen by the company's advertisement on the cover of this work.

As our original Prospectus intimates, we have directed our special attention to the following important objects: viz:—the cultivation of VARIETY as to the colors and forms of our teeth, and the preservation of *strength* as well under the blowpipe as in the process of mastication. These are points so essential in mineral teeth that the Actuaries of this company are unitedly resolved never to lose sight of them for a single moment, in pursuit of any other object whatsoever.

The *numbering* of the teeth manufactured in this establishment, by means of figures on the backs, is a feature not to be overlooked by the Dental Operator, as by aid of these numbers he can order at any time, exactly the size of teeth needed for immediate use.

In addition to the facts already stated, it is but just to the company, that the profession should know some other particulars regarding the manufacture of our teeth. The rivets are not only accommodated in size and number to the different sizes of teeth, respectively, but those nearest the butts of the teeth are longer than those near the points, in order that they may take firmer hold of the body; and our longest teeth have three pivots each.

When the rivets are thus of different lengths and penetrate to different depths, within the body of the tooth, they are much less liable to break the tooth, or to be withdrawn when force is applied to them in mastication, or otherwise. More than this, the heads of our rivets are made *funnel shaped,* whereby is avoided any thick mass of metal which might injure the tooth by expansion.

ARTICLE XII.

TO CONTRIBUTORS.

The Editors of THE FORCEP, respectfully invite the co-operation of all members of the Dental profession who are willing to furnish articles suitable for the pages of this Journal. Essays of a practical nature, and recipes of known value, will be especially acceptable and extensively useful, as we intend that this work shall reach all the Dentists whose addresses can be obtained, and more particularly those who are willing to aid its publication and increase its usefulness by contributing one dollar per annum for its support.

ARTICLE XIII.

LETTERS AND ORDERS.

It is particularly desired that all Letters, Orders, and packages sent to the Actuaries, and relating to the business of the Company, should have the following address: "New York Teeth Manufacturing Company, No. 404 Broadway, New York." Letters to the Actuaries intended to be private, should be marked "*confidential.*"

THE FORCEP.

Vol. I. MAY, 1855. No. 2.

[From the Dental Register of the West.]

ALLOYS.

BY GEORGE WATT, M. D., D. D. S.

Read before the Mississippi Valley Association, Feb. 23d, 1855.

Having been appointed to read an essay at this meeting of the association, I propose to offer you a few remarks on the general properties of alloys.

The term alloy, though once more limited, means a compound of any two or more metals. It is still a matter of dispute with some, whether metals combine chemically, or whether their particles are mechanically mixed, in the formation of alloys. It is known to all that some unite much more readily than others. Gold and platinum, for example, unite far below the melting point of the latter, while silver and iron are united with difficulty.

This subject, though somewhat neglected, is of great importance, as each alloy is, in reference to the arts and manufactures, a new metal, both on account of its physical and chemical properties. An extensive field here lies open. Only a few alloys have been studied by the chemist, and still fewer have been practically employed. Slight changes often constitute valuable improvements in these bodies, and there is no end to their modifications.

Metals do not unite with each other in the solid state. Assuming that alloys are chemical combinations this is easily explained, their affinity being counteracted by the force of cohesion, and if they are mechanical mixtures the case is equally clear, for the ultimate particles of the metals must be separated to some extent in order to commingle. Two metals will, in some cases combine, when but one of them is liquified, as when brass is formed by the immersion of copper in melted zinc.

Though metals appear to unite with each other in all proportions, yet it is probable that they tend to combine in a definite ratio, for several atomic compounds of this kind occur native. The native gold of the auriferous sands, for example, is an alloy with silver, in the ratio of one equivalent of silver, united with four, five, six and twelve equivalents of gold, but never with the fractional part of an equivalent. But the alloys being generally, as it were, soluble in each other, this definiteness of combination is not observable in most cases.

The alloys, like the metals, possess metallic lustre, conduct heat and electricity, are, to some extent, malleable, sonorous, elastic, and ductile, and are sometimes susceptible of crystallization. They often differ materially from the elements composing them. The hardness of a metal is generally increased by being alloyed; it is therefore frequently more elastic and sonorous. Alloys are generally less malleable and ductile than the metals composing them. Formed of two brittle metals, they are always brittle; of a ductile and brittle one, they are generally brittle, and are sometimes so when formed of two ductile metals.

The density of an alloy may be either greater or less than the mean density of its elements. Alloys of gold with tin, zinc, bismuth, antimony, or cobalt, are examples of the former; those of gold with silver, copper, lead, or iron, of the latter.

To be continued.

To the Editors of "The Forcep."

Gentlemen :—With your permission I will avail myself of a page or two of your Dental periodical, the *Forcep*, to make a few remarks upon the merits of a pamphlet which was forwarded to me anonymously, with page 44 marked for my especial edification, as I suppose. Having perused the page in question, I came to the conclusion that the said *marked page* was the *typification* of the editor's brains, eliminated in some *flashy* publication, perchance the Dental Scourge, or Dental Whip, or Dental Hawk and Buzzard, or some such delectable print "to fright the souls of fearful adversaries," presented in the various ambitious but unsophisticated dentists whose *cacoethes scribendi* might subject them to the awful criticisms of this flashy editor. Referring to the title page, however, I found that the pamphlet was offered to the public, *in all seriousness*(?) as a respectable periodical, and was sent the rounds under the euphonious title of "The New York Dental Recorder," which I found is published by its "Proprietors" OSTENSIBLY as a medium for dental scientific subjects, for enlightening a benighted profession, but in reality for advertising, *ad captandum*, the dental wares which the Proprietors have "on hand," for sale ! The New York Dental Recorder for lack of originality, apes the manners of successful periodical literature. It has established a "Book Table" (!!!) for reviewing books, which chance or good luck might vouchsafe to it; or which the philanthropic in charity might give or *loan* to its editor. In this latter manner, no doubt, the editor of the Dental Recorder procured a copy of Ambler's Dental Monitor,—a work! which the Dental Recorder admits was a *blank book*, and therefore nothing in it; hence, the very able criticism of the book-table editor of the Dental Recorder, made somewhat spicy with the condiments of scurrility and a gratuitous, ungentlemanly personal attack on Dr. Ambler, whom the editor sneers at with a note of interrogation? The next "god-send" to the "Book Table,"—heaven save the mark,—of this *lusus naturæ* editor, is the first number of the *Forcep.* Like water to a rabid dog, the sight of the Forcep sets all his teeth on edge, and causes such spasmodic deglutition that the antidote of scurrilous criticism alone appears to preserve his system from a complete state of collapse, whilst in the paroxism of the symptoms of his Forcep-phobia he indulges in various ground and lofty tumbling in futile attempts at wit. His condition—physiologically considered—rendering his brain somewhat congested, so his ideas are necessarily congested too, which are most evident in his typomutterring delirium, as exhibited on page 44 of the Dental Recorder. Under such painful circumstances, it is not at all surprising what stupidity such persons may commit when entrusted with such dangerous weapons as pen, ink and paper. For an illustration of this fact, the readers of the Forcep have only to peruse the table-book twaddle criticism of the Dental Recorder, to learn without the knowledge of geometrical progression or angles of incidence, how very easy it is for any youthful editor to write himself "down an ass." The Forcep-phopia stricken critic having arrived at the climacteric of his mental force, makes a dangerous attempt at perpetrating—wit! He attacks the contents of the Forcep, and the article written by your humble servant, the subscriber. He says "We" —ma conscience!—"have only time and space to note the following, from the pen of *the* 'medically educated' Dentist. Speaking of salivary calculus, he gives the following to the great unenlightened."

"*The medically educated dentist*" alluded to, is the subscriber, A. C. Castle, who furnished the first number of the Forcep with a "a paper" on *Salivary Calculus*, from which the sensible editor of the Dental Recorder gives a most copious extract, and then winds up with the following delicious morceaux of suicidal criticism:

"The first part of this extract gives us a combination of big words and bad English that would astonish the 'Spirits.' Of the latter portion it is but justice to say that the style accords with the subject, being simply 'dribblings.'

"*The* medically educated Dentist" labors under the most oppressive disadvantage with his big words, bad English, and other "combinations," to cope with C. W. Ballard,—D. D. S. we believe. Not having passed through that dreadful ordeal of obtaining the classical initials tagged on to my name, I am not prepared to break a lance or shed a drop of ink against those potent initials D. D. S.!! Good gracious. I am only "*the* medically educated Dentist." What a hapless state to cope with a *Doctor of Dental Stupidity!*

It is somewhat surprising, too, that so much unique (?) wit should have been expended on "the medically educated Dentist's" article on Salivary Calculus, published in the Forcep, when the aforesaid D. D. S. might have exercised his wit! on an article from the same person's pen published in the Dental Recorder a few months since, which the "proprietors" teazed from him week after week, until he only wrote (while the messenger waited for the MS) the said article to get rid of their importunities. I must confess that my article in the Dental Recorder was a lost opportunity for C. W. Ballard, D. D. S., to split his brains upon. The critic seems astonished at my "big words," which he deems "bad English." No doubt of it! I do not append medical dictionaries, or a glossary, to my medically written articles. I can, therefore, well understand why my article is incomprehensible, which may account for the "*milk in the cocoä-nut,*" that the editor of the table book of the Dental Recorder should deem "*the medically educated dentist's*" language "bad English." The editor of the Dental Recorder is evidently afflicted with "dribblings,"—his ink is too diluted—if I may judge from the spasmodic paroxysm of his impotency, even to impregnate the Dental Recorder with a germ of an idea that offers a probability of fruition, or profit, either to its proprietors or to its readers.

NEW YORK, March 26, 1855. A C. CASTLE, M. D.

[From the Portlund Eclectic.]

DENTISTRY.

The friends of Dr. Coffin will regret to learn that he is about to remove from our midst. He has practiced in his profession in this city for many years, and has gained an enviable reputation and a large patronage. He has recently received a call for his professional services in England, which he has been induced to accept: we believe he is to be located at Manchester. The best wishes of a large circle of friends and acquaintances in this vicinity will attend him. It will be seen by a card in another column, that he recommends Dr. E. N. Harris as his successor. Dr. H. brings with him testimonials of the highest character.

ALCOCK TEETH.

The New York Teeth Manufacturing Company respectfully acquaint the Dental profession, that in order to accommodate those who prefer the forms of Teeth formerly manufactured by Dr. Jas. Alcock, they have employed the workmen, and purchased the moulds, mills, materials, and entire manufacturing establishment. From those requiring Teeth of the above description, they solicit orders.

The Company avail themselves of this opportunity to thank the profession for the very liberal patronage bestowed upon them, and assure them that no exertion shall be wanting to merit a continuance of the same.

[From the Boston Medical and Surgical Journal.]

COMPLIMENTARY.

"During the short period in which Dentistry has had a place among the useful and professional branches of business, with a rank between an art and a science, it has made surprising progress in the United States. It is not hazarding too much, we apprehend, to say that in Europe, both in the practice and the literature of modern dentistry, they fall immensely in the rear of young America. From the Baltimore College of Dental Surgery, a class of writers have been sent abroad, who command the admiration of scholars, and of men of science, by their erudition, bold conceptions, and depth of physiological research. We are not jealous of them, but proud of their distinction. In point of originality, critical observations, into the anatomical relations of the human system, and industrious efforts to improve and elevate their profession, they are not surpassed by writers in any other medical science.

NEW TRIAL FOR DR. BEALE.

In the Supreme Court of Philadelphia, a writ of error was granted in the Beale case, on the ground that the jury that tried the case, instead of being sworn to tender a verdict according to the evidence, were sworn to try the guilt or innocence of the defendants; also, that the defendant instead of being sentenced to solitary confinement at labor, was sentenced to imprisonment at hard labor.

[From the London Lancet.]

ANÆSTHESIA BY COLD IN SURGICAL OPERATIONS.

SIR:—The experience of the last few weeks has proved to my complete conviction, that local anæsthesia can be obtained by the benumbing influence of ice, without resorting to the administration of chloroform, which by its subtle power renders insensible the system generally, and occasionally produces those fatal effects to which almost every surgeon can bear testimony. I have tried the ice in several cases, in both hospital and private practice, and in almost every instance the success was evident, the patient when blindfolded being ignorant of the use of the knife. It affords me great pleasure to confirm the evidence of Dr. Arnott on this interesting subject, and to draw the attention of surgeons, both at home and abroad, to this agent, whereby patients can be freed from the pain which attends many every-day operations we are called upon to treat with the knife, and reserve chloroform for those very severe cases where either the duration of the operation, or the depth of structure, requires the employment of that potent agency.

I am, Sir, your obedient servant,
THOMAS WAKELY, F. R. C. S.
Arlington Street, Feb., 1855.

We would be pleased to have a report upon a trial of the above in extracting teeth, or equal parts of pounded ice and salt enclosed in a thin bag and applied externally from 3 to 4 minutes.

Book Notices.

TTEATISE ON CRYSTAL GOLD, *by Wm. H. Dwinelle, M. D., D. D. S.*—We recommend a careful perusal of this pamphlet to the profession. If all that is claimed in it for the Crystal Gold can be accomplished by skilful operators, it behoves the united profession to go into a course of experiments for its successful use.

WATERS' DENTAL REGISTER.—This is one of the several publications of the same nature now offered to the profession. Dr. Waters, of Waterburry, Conn., is the editor, and Messrs. Bronson Bros., eminent publishers of that city, the publishers. It is a very useful and beautiful work, and is for sale by the New York Teeth Manufacturing Company. Price $5,50. and $2,50.

AMBLER'S JOURNAL OF DENTAL OPERATIONS.—This work has been for some time in the market. It has, like Dr. Dewar's work, wood cuts representing a double set of teeth, inserted for the purpose of noting the situation of plugs inserted, or other operations performed.—pp 200. Price $2,50.

AMBLER'S DENTAL MONITOR.—This is a new Quarterly, the first number having appeared in February, and is published in a very attractive style, being mainly designed for popular instruction and amusement.

DENTAL REGISTER OF THE WEST.—The April number has been received, and we are pleased to learn that its editor, Dr. James Taylor, has it in contemplation to enlarge the next volume. The pages of the present number are filled with articles useful and interesting to the profession, especially pages 218, 219 and 220, which we have some slight recollection of writing for the Forcep, but which the editor has omitted to acknowledge. This, we have no doubt, is an omission of the printer, as another article of ours in the same number has been credited.

DENTAL RECORDER.—Honorable competition and generous rivalry are sources of improvement and indications of progress in Literature, Science, and Art; whilst mean jealousy and unprovoked detraction are unmistakable evidences of a retrograde movement towards the aboriginal barbarism of savage tribes.

We are by no means disposed to elevate small matters, or still smaller critics, into any great importance, or very extensive notoriety, at the expense of our columns; and consequently we reluctantly give a world-wide circulation in our pages to an anonymous criticism of the first number of THE FORCEP, by a writer in the February number of the Dental Recorder. It is better that such fiery ebulitions of psuedo-witticism should remain, like the circulation of the work in which it appears, within the modest "circumference of a Winchester bushel."

The new fledged eaglet, on first floundering from its aerie, is apt to fly furiously at the sun, whereas, the same bird, when he becomes an eagle, contents himself with floating pleasantly on the summer air, without any hope of ascending to the altitude of the Luminary of Day.

But this *fowl* of which we have been speaking, is not of the Eagle tribe, but a veritable "*bird of passage;*" and its last migration is the *foulest* of the whole. It has repeatedly passed from one climate to another, until at length it seeks what it has happily found, a peaceful hibernation in quiet obscurity.

To drop the figure;—The Dental Recorder which, in its February number, attacks the Forcep with the pertness of the wren, rather than the audacity of the bird of Jove, was once highly respectable under the auspices of the N. Y. Society of Dental Surgeons, and the editorship of Dr. C. C. Allen. After having been repeatedly offered to the editors of the Forcep, and refused their paternity, and hailing, for a season, from a neighboring state, now, in its last struggle for existence, it returns to the metropolis to die in peace.

Although the Forcep might readily *extract its teeth*, and thus relieve it from the violent attack of neuralgia, occasioned by the appearance of that Journal, still we shall content ourselves with allowing it to commit suicide by voluntary accumulation of *tartar*, blackened and consolidated by filthy eructations of splenetic gaul.

Advertisements.

Reynolds' Dental Detergent.

The title of this elegant article for the toilet, is, by no means, descriptive of all its admirable qualities. Its least desirable effect, as a *medicament*, is that it keeps the mouth and teeth perfectly clean and sweet, washing away their impurities, and dissolving the saliva after sleep, which renders the mouth so disagreeable in the morning.

More important excellencies than these, however, distinguish this decoction. It cures the tooth-ache, with almost unerring certainty. This is a quality possessed, in an equal degree, by no other compound in the *materia medica.* Such a remedy for this detestable evil, has been, in all ages, like the philosopher's stone, an object of universal desire. It is not at all times either possible or desirable to extract every tooth that becomes inflamed and painful. Temporary expedients for relief, are sometimes indispensable. Many have been tried, but few found successful, excepting the *cold steel* of the Dentist or the Doctor, until the fortunate discovery, by Dr. Reynolds, of this most popular specific. It is not too much to call any remedy a *specific*, which will cure any specific disease in ninety-nine cases of a hundred. The experience of many hundreds of persons, among whom are physicians of the highest reputation, enables us to say that a failure of this Detergent to allay or cure the tooth-ache, when faithfully applied, is unknown. Not unfrequently the very first application performs the work; yet, like many other medicines, it generally requires repetition, and sometimes should be rubbed into the gums with the finger or a tooth-brush repeatedly.

Furthermore the Dental Detergent recommends itself to the favor of all individuals and families able to afford the common comforts of life, by healing diseased gums, reducing inflammation, and removing from the breath, the intolerable effluvia of decaying teeth, and the still more execrable odors of that vile and loathsome weed, which no animal, excepting man and the tobacco worm, has ever been known to eat.

This remedy for tooth-ache and diseased gums, employed, likewise, as a Dentifrice, with signal advantage, has been tested for several years, by

Dentists, Physicians, and their patients, until the introduction of it to the Dental profession becomes at once a duty and a charity.

It is not too much to say of it, that wherever it has been fairly tried, it has met with decided approbation, such as we believe has not attended the use of any other article intended for the same purpose.

It has been used in the city of New York by many individuals, and recommended by Dentists who have tested its efficacy in curing toothache, diseased gums, and incipient tartarous accumulations, for several years past, so that no doubt can be reasonably entertained as to its value, both in private and professional practice. In fact, it occupies a place in dental therapeutics, which no other known article is capable of filling with equal success and satisfaction. At wholesale, in lots not less than 12 bottles, it will be packed and forwarded to cash orders at 25 per cent. discount from retail prices, which are:—For 16 oz. bottles, $1,00, for 8 oz. bottles, 50 cents.

Watts' Sponge Gold.

Messrs. Watts & Co., of Utica, have made arrangements to supply the New York Teeth Manufacturing Company with their Sponge Gold, of all the different Numbers, and it will be seen, an another page, that instruments for introducing it, are made and for sale by this Company.

It is proper for us to apprize the profession that Mr. Watts has a patent for the manufacture of Sponge Gold.

Griswold's Gold Foil.

The New York Teeth Manufacturing Company are general agents for Mr. Griswold's popular *Gold Foil*, which is favorably known and extensively used; being considered by those who use it fully equal to Abbey's.

Price $28,00 per oz., with the usual discount to dealers. Also, Griswold's chemically pure Tin Foil.

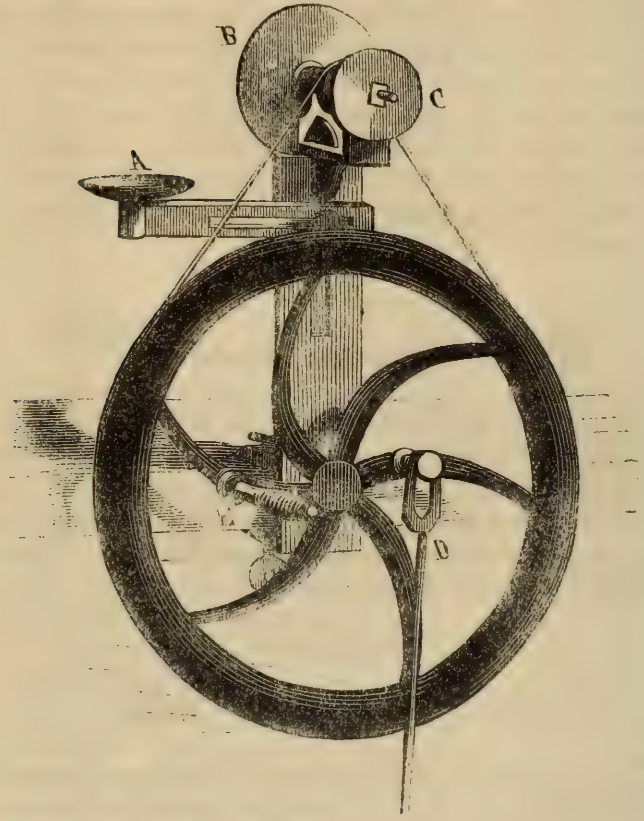
N. Y. Teeth Manufacturing Co.'s Pure Gold Foil.

This Company solicit from the Profession a trial of pure Gold Foil, of their own manufacture. They warrant it fully equal to any Foil made. Should it not prove so, on trial, it can be returned at the Co.'s expense.

Price $28,00 per oz., with the usual discount to dealers.

New York Teeth Manufacturing Company's

CATALOGUE AND PRICE CURRENT.



Mead's Lathe.

This machine is perfectly simple in its construction, strong and convenient. It is designed to be screwed to a bench or table, for which suitable attachments are provided. This Lathe carries two corundum wheels at a time, or a wheel and brush if desired. A is a cast-iron rest moveable at the will of the operator, B is one of the corundum wheels, and C the other. D is the attachment for movement by the foot, and E the handle when hand-power is employed. The balance-wheel is proportioned to the size and power of the apparatus. Price $10.

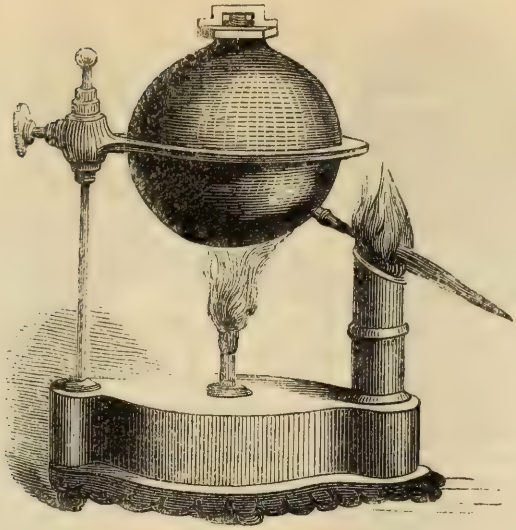
This is the best grinding machine with which we are acquainted at the price, suitable for either a stationary or traveling dentist.

TEETH.

Gum front teeth,	per hundred,	$20 00	Plain front teeth,	per hundred,	10 00
Gum, Mo. and Bi.	do.	20 00	Plain Mo and Bi.	do.	10 00
Continuous Gum teeth,	do.	12 50	Pivot teeth,	do.	10 00
Gum Fronts, in sections of 3 teeth, each section,		1 00	Block Teeth, upper or lower set entire, per tooth,		75
Gum, Mo and Bi., in sections of 2, each section,		40	Blocks in partial sets, each tooth,		75 cents to 1 00

Block teeth and Continuous Gum teeth mounted and finished on reasonable terms.

Orders will be filled without delay by the Actuaries of the Company, who are experienced in the practice of Dentistry, consequently Dentists may rely upon having teeth sent with strict regard to description and the requirements of each case.



Self-acting Blowpipe.

This beautiful instrument is manufactured for this Company, wholly of brass, with the exception of the pedestal, which is of iron. It is a modification of Dr. Black's Compound Blowpipe, improved and adapted to dental purposes. The ball is thick and strong, with safety valve on top, and every part constructed in the most substantial and workmanlike manner, being made by an excellent artizan of long experience in his business. To persons having feeble lungs, or otherwise disinclined to use the mouth blowpide, this apparatus is an invaluable acquisition. Price $10,00 ; Extra thickness $10,50.

The Company has also the Bellows Blowpipe constructed by Dr. Loomis, of Saratoga, impelled by a lateral motion of the knee. Price $10.

METALS.

GOLD.

Gold Plate, 18 carat,	per Dwt.	90	Gold Spiral Springs,	per Dwt.	1 00
Gold Plate alloyed with platina for clasps	per Dwt.	90	Gold Solder for 14 carat,	do.	75
Gold Plate, 20 carat	do.	1 00	Gold Solder for 18 carat,	do.	90
Gold Wire,	do.	90	Sponge Gold for stoppings,	per oz.	32 00

SILVER.

Silver Plate,	per Dwt.	$ 08	Precipitated Silver,		
Silver Wire,	do.	10	Granulated Silver.		
Pure Silver,			Silver Solder,	per Dwt.	08

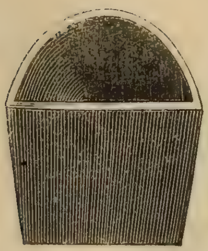
Our Silver Solder flows beautifully, with the toughness of plate.

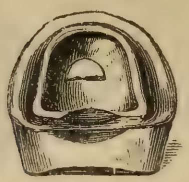
PLATINA.

Platina Plate,	per oz.	Platina Sponge,
Platina Wire,	do.	
Zinc,		Tin,
Lead,		Spelter,

MINERALS.

Feldt Spar, ground,	per lb.	$0 50	Crocus,
Feldt Spar, not ground,	do.	0 10	Scotch Stone,
Quartz. ground,	do.	0 50	Arkansas Stone,
Quartz, not ground,	do.	0 10	Turkey Stone,
Rotten Stone,			Asbestos,
Rouge,			Oxide Uranium,
Kaloin,			Oxide Titanium,
Clay,			Oxide Cobalt,
Plasterof Paris,			Oxide Manganese,
Emery			Oxide Gold.


1


2

Casting Flask.

In using this Flask the small end is placed downward on a flat surface over the wax impression. The inside of the flask should be oiled. Then fill the flask to within three-fourths of an inch of the top, or larger end, with plaster of Paris of the usual consistency for moulding, which may be best determined by mixing calcined plaster with water, till the water will absorb no more when at rest. When the plaster becomes consolidated, turn the flask over on its larger end, and a smart blow upon a bench or table will cause the plaster cast to fall. After carefully removing the wax and drying the plaster, trim it and cover it with a coat of varnish. Then replace the plaster cast in the flask as it stands with its larger end on the bench, and sift upon the cast moulding sand, and pack it till the cast is filled. Remove the plaster cast carefully, and when the sand has been thoroughly dried, pour in the metal intended for the male cast. When cold, remove the sand, introduce the metal for the female cast, and the work is completed

No. 1 represents the Flask. No. 2 the plaster cast when withdrawn.

FORCEPS.

OCTAGON JOINT.		OVAL JOINT.	
For front sup. Incisors,	2	For front superior incisors,	1 50
For lateral sup Incisors,	2	For lateral sup Incisors,	1 50
For inferior Incisors,	2	For inferior Incisors.	1 50
For superior Cuspids.	2	For superior Cuspids,	1 50
For inferior Cuspids,	2	For inferior Cuspids,	1 50
For superior Bicusps,	2	For superior Bicusps,	1 50
For inferior Bicusps,	2	For inferior Bicusps,	1 50
For sup. right Molars,	2	For superior right Molars,	1 50
For sup. left Molars,	2	For superior left Molars,	1 50
For inferior right Molars,	2	For inferior right Molars,	1 50
For inferior left Molars,	2	For inferior left Molars,	1 50
For roots of sup. Incisors,	2	For roots of sup. Incisors,	1 50
For roots of inferior Incisors,	2	For roots of inferior Incisors,	1 50
For roots of superior Cuspids,	2	For roots of superior Cuspids,	1 50
For roots of inferior Cuspids,	2	For roots of inferior Cuspids,	1 50
For roots of superior Bicusps,	2	For roots of superior Bicusps,	1 50
For roots of inferior Bicusps,	2	For roots of inferior Bicusps,	1 50
For roots of superior Molars,	2	For roots of superior Molars,	1 50
For roots of inferior Molars,	2	For roots of inferior Molars,	1 50
For sup. Dens Sapientiæ,	2	For sup. Dens Sapientiæ,	1 50
For inferior Dens Sapientiæ,	2	For inf. Dens Sapientiæ,	1 50
For separating roots,	2	For separating roots,	1 50
For excising teeth,	2	For excising teeth,	1 50
For compressing Plugs,	2	For children's forceps.	1 50
Hullihen's Screw Forcep,	3	Hullihen's Screw Forcep.	2 00

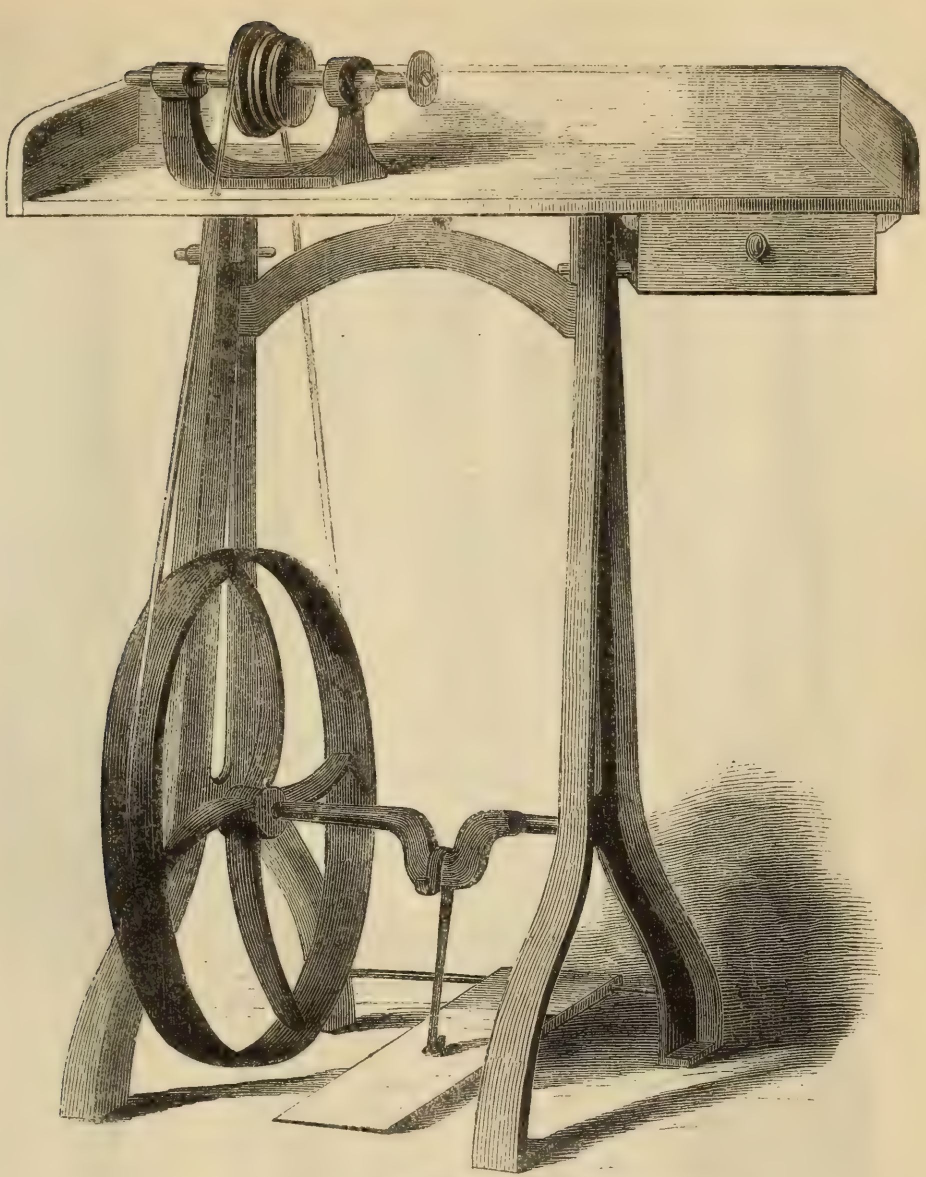
STUMP ELEVATORS.

The Compound Elevator,	2 00	Punches, each	50
Screws, each,	75	Hooks,	50

Prices vary according to quality and size of Instrument and handle.

LANCETS.

Pocket Lancets,	1 50	Wire handled Lancets,	25
Pocket Lancets,	3 00	Pearl and Ivory handled Lancets.	1 00



Dental Lathe.

The above engraving represents a Lathe and Table ready for use, with a corundum wheel on the mandrel It is wholly of iron and steel, excepting the table, and every way a strong and effective apparatus for a Dentist. It has mandrels fitted for carrying burrs, drills, and wheels of all descriptions, and is much better made than such articles generally. Being put together with screws, it is readily taken apart and packed in a flat box. Price $20.

The Company has. also, small Grinding Machines, for traveling dentists, fitted up to screw to a table. Price $3.

PLUGGERS.

Ivory handled Pluggers,	75 cts. to 1 50	Steel handled Pluggers, from 13 cents to
Ebony handled Pluggers,	50 " 75	63 cents

SCALERS.

Ivory handled Scaler,	0 75	Steel handled Scaler,	0 25

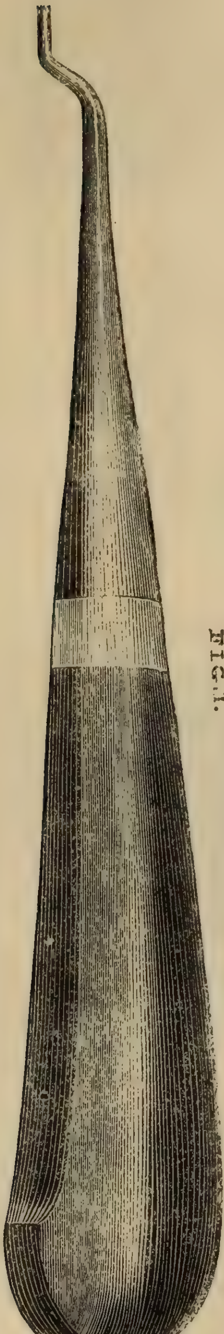


FIG.1.

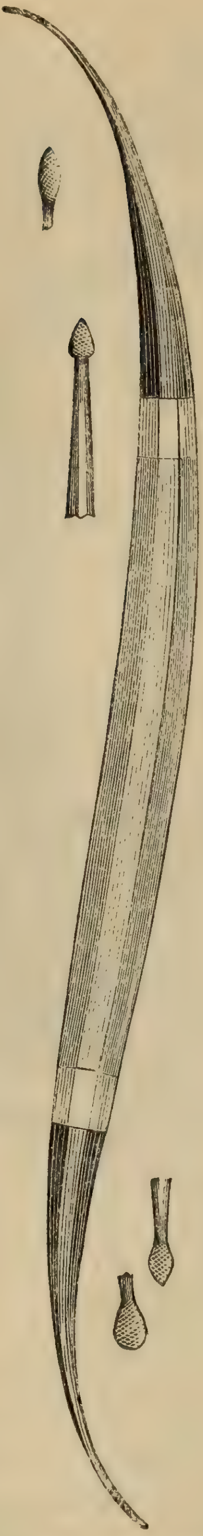


FIG.2.

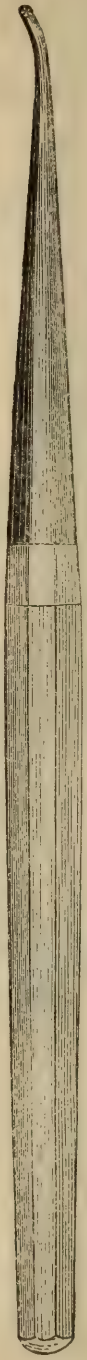


FIG.3.

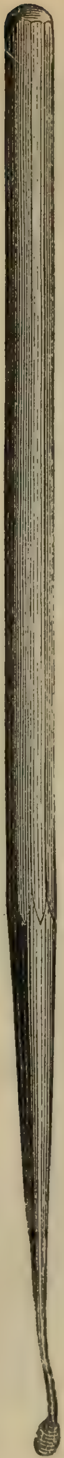


FIG.4.

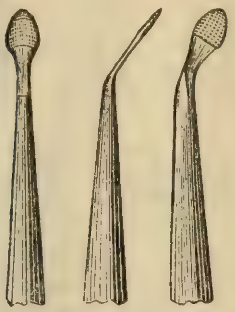
FILLING INSTRUMENTS.

A large assortment of all the following described Instruments are manufactured and for sale by this Company. Those adapted for Crystaline Gold, are made under the personal supervision of Dr .

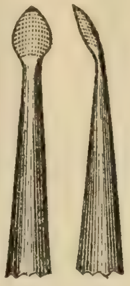
W. H. Dwinelle. These points are adapted to the usual styles of Instruments without additional charge; also plain points of these as well as all other styles constantly on hand and for sale. All descriptions of Instruments made to order.

Instruments of the size of Figs. 1 and 2, ivory handles, $1,50 each—with ebony handles $1 each. Fig. 3, ivory handles, 88 cents each—with ebony handles, 62 cents. Any of the following points described, in steel-file-cut handles, from ¼ to ½ inch, at $4,50 per dozen. Fig. 4, plain steel octagon handles, $3,50 per dozen.

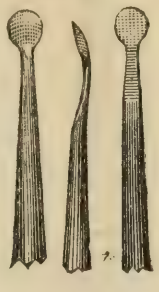
Nº 1



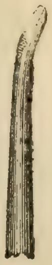
Nº 2.



Nº 3.



Nº 4.



No. 1 represents a broad-faced tool, slightly rounded at its edges, bent at an angle, the working end being serrated on all sides. The profile view shows that it is made thin, for the purpose of increasing its delicacy, as well as to admit of its being used for placing gold between approximal and slightly separated surfaces. It is useful for many purposes, but chiefly for carrying masses of Crystal Gold to their place, and modeling and shaping them into form. Instruments of this character, but of smaller size, are particularly useful in introducing gold into front teeth.

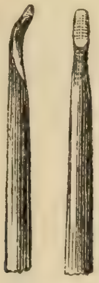
No 2 is a serrated Instrument of the same general character but broader and thicker, conical in form, and terminating in a point at its apex. It is an exceedingly fine modeling tool, and is especially useful in introducing large masses of gold into posterior cavities.

No. 3 is also of the same general character, circular in shape, convex on one side, and flat on the other, invented by Dr. W. M. Hunter, of Cincinnati. In some parts of the operation, it is more useful than any other form. By rotating the instrument in the act of filling, the progress of consolidation is greatly facilitated. Its opposite or flat surface from its concave curve, is very useful in introducing gold into posterior approximal cavities, or in all operations where the operator must work toward himself.

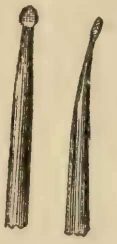
No. 4 is an instrument bent at a slight angle, flat on its upper surface, and terminating in a square point. The under surface is convex, gradually rounding at the sides until it meets the angle of the flat upper surface. Instruments of this character are more useful than others, for the reason that they combine all the advantages of three or four instruments in one, so that we can apply several different kinds of forces, without laying down the instrument.

The upper and lower surfaces, the sides, and the ends, furnishing different and practical presentations, all of which are commanded by simply giving the instrument a part of a revolution.

Nº 5.



Nº 6.

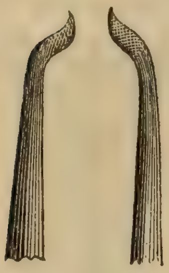


No. 5 represents an instrument slightly modified from the former, the chief difference arising from its having a concave groove cut out immediately behind the convex presentation of the under surface, leaving the latter prominent, and giving the instrument a *neck* at this point, enabling the beaded prominence to pass for a short distance into the cavities of posterior approximal presentations, while the curved neck of the instrument avoids the projecting angle of the tooth which would otherwise interfere. It is very useful also in working the gold into the undercut angles of large molar cavities.

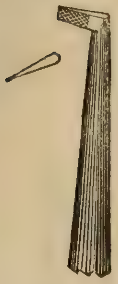
These instruments may be bent to more acute angles or curves, and diminished to the most delicate form with great advantage. With these modifications they are often very serviceable in filling cavities in front teeth.

No. 6 is a flat, thin, coni-formed instrument diverged to a slight angle, and is particularly useful in introducing gold between the approximal surfaces of front teeth. It is also very useful in securing good joints about the borders of large molar stoppings the point and edge of the instrument being used for this purpose, with great advantage, care being taken during the finishing operations of condensing or stopping, to so place the point of the instrument upon the stopping, as to have a small bordering of gold intervene between itself and the enameled edge of the cavity to prevent fracturing it.

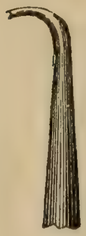
Nº 7.



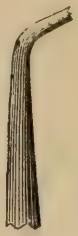
Nº 8.



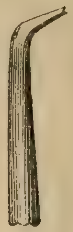
Nº 9.



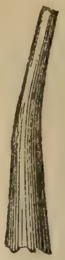
Nº 10X.



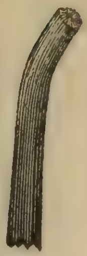
Nº 10.



No. 11.



No. 12.



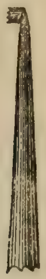
No. 7 represents a right and left instrument, with a parabolic, or rather, a wave-line curve, turned at an angle of about 35° from its shaft. Each side is serrated. It is very useful in filling all classes of approximal cavities, and was invented by Dr. R. Arthur, of Philadelphia.

No. 8 is a serrated blade instrument, bent at various angles, and of different degrees of thickness, used principally in filling front and approximal cavities.

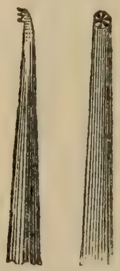
Nos. 9, 10, and 10x, represent the type of various points and blades with serrated ends, all of which are bent to numerous angles and curves, and of different sizes, even to the most delicate.

Nos. 11 and 12 give the type of another variety of round instruments, ending in serrated points bent at different angles, and reduced to the most delicate dimensions.

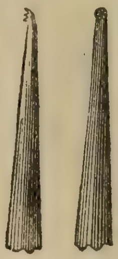
Nº 13.



Nº 14.



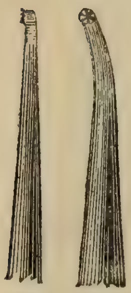
Nº 14X.



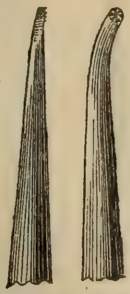
No. 13 is a type of which Nos. 14, 15, 16, 17, 18, 19, and 20, are modifications, for introducing gold into approximal cavities: the serrated point turning at right angles with the instrument, being made more or less prominent, according to the various presentations which may occur.

Nos. 14 and 14x represent a front and side view of one of the last named instruments, with a shallow plugging disk.

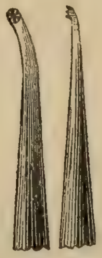
Nº 15



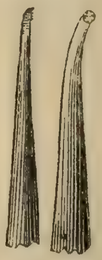
Nº 16.



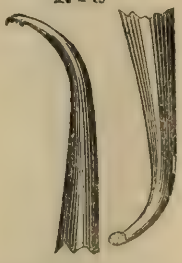
Nº 17.



Nº 18.



Nº 19

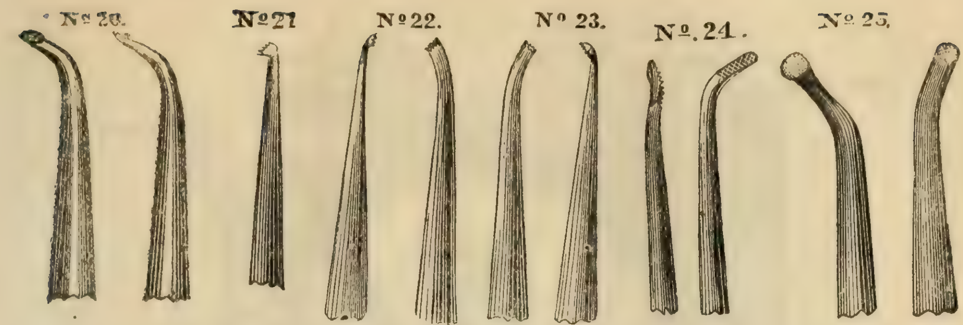


Nos. 15 and 16 represent a right and left instrument. Being diverted to a slight angle, it becomes one of the most convenient instruments for introducing gold into approximal cavities, particularly between the front teeth.

Nos. 17 and 18 are smaller instruments of the same character.

Nos. 19 and 20 are especially useful in introducing gold into the anterior and posterior approximal cavities of bicuspid and molar teeth. These instruments are copied from patterns of Dr. C. A. Harris' suit of instruments.

No. 21 is an instrument whose extremity, or workidg end, is at right angles with the shaft, and terminates in a serrate form, much resembling a rake with a double row of teeth.

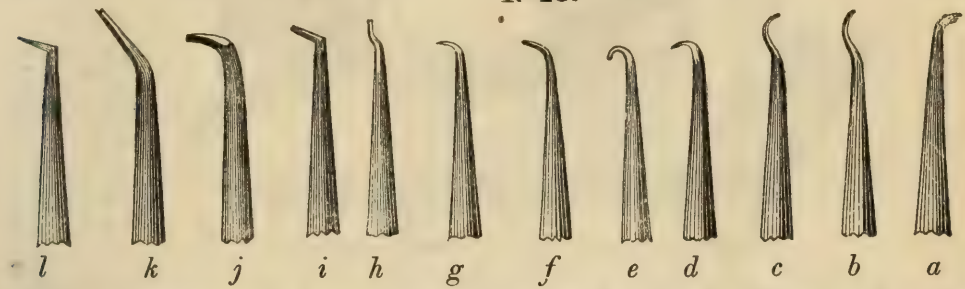


Nos. 22 and 23 are modifications of the same instrument diverted to opposite angles, making them rights and lefts. They are especially useful in filling front teeth.

No. 24 is a modification of No. 8.

No. 25 is a convex, dentated instrument for condensing the grinding surfaces of large stoppings. and is one of Dr. Hunter's patterns. By rotating the instrument when force is applied, each dentated point acts successively as a lever and a fulcrum, giving the instrument a power of condensation possessed by no other. The dentated points are represented too fine.

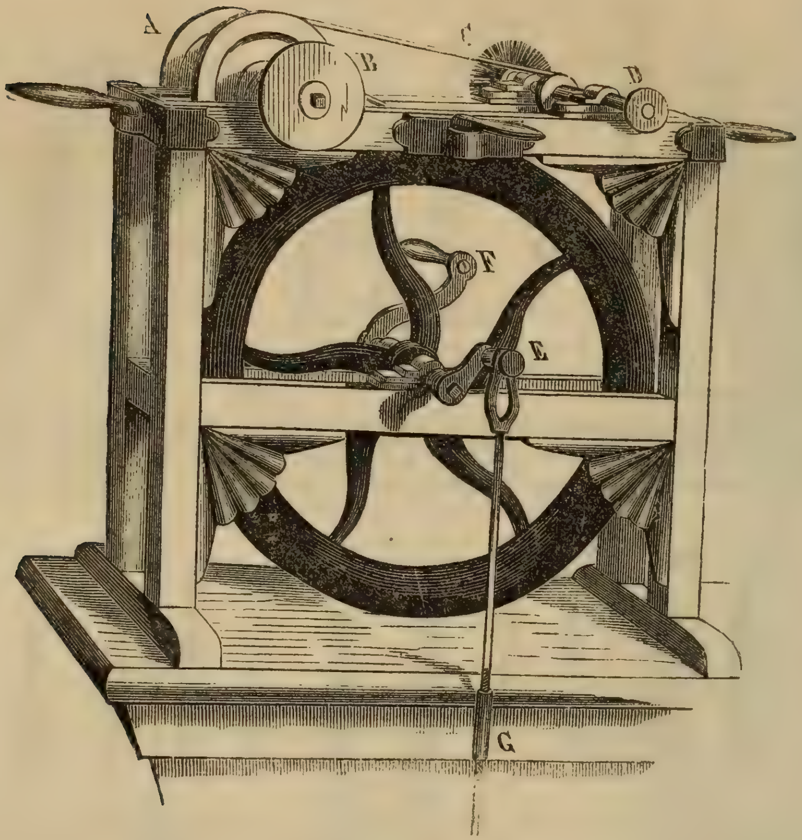
No 26.



No. 26 represents a cluster of points, some of which may be new to the Profession. Those terminating in the hook form, *f*, *g*, *h*, *i*, will be found very useful in packing Crystal Gold about the joints, within the cavities of front teeth, when the operator is working toward himself. The wave form point (*j*, *k*,) is useful in filling all classes of front teeth. It is especially useful in the operation illustrated by Fig. B, hereinafter to be described. The uses of the other forms will suggest themselves to the eye of experience, and they may be modified or increased, to suit the needs of the operator. Several of them should be made rights and lefts. Most of them, with the exception of the point, may be advantageously constructed like Fig. 4, in the plate, which is made entirely of steel, and is one of the cheapest forms. All the modeling points, too, might be attached to similar shaped handles.

If the instruments are larger, the size of the steel handles may be proportionately increased. If a more expensive and agreeable handle is desired, the form and material of Figs. 1, 2, and 3, are superior to any other. Fig. 1 in the plate represents an excellent form for the handle of a larger class instrument, invented by Dr. C. W. Ballard, of New York, editor of the Dental Recorder. The engraving gives a very accurate idea of its proportion, and represents it of natural size. No form of handle could be more convenient or effective ; it is so anatomically correct in its conformation, and adapts itself to the palm and figure of the hand so completely, as to ensure a remarkable degree of precision and certainty of movement.

For Nos. 10, 11, 12, 13, 14, 15, 16, 19, 20, and 25, this handle, made of ebony, is particularly useful. Fig. 2 represents a very convenient form for all that class of instruments, described as a modification of the modeling tool of the sculptor. It will be seen that it has the general character of that instrument of the artist. It is furnished with working points or presentations at either end, upon different curves, thus greatly facilitating the operation, and relieving the Dentist of much of the annoyance and interruption consequent upon laying down and taking up the tools. Its points are serrated over their entire surface. For convenience, delicacy, and neatness of manipulation, for the readiness with which it takes hold on masses of Crystal Gold, the certainty and ease with which it carries them to their destination, and for all the uses for which it is designed, it has no superior. The cut represents the instrument with an ivory handle, and of natural size. This, too, may be made cheaply by forming it entirely of steel. All of the points represented by the figure, (26,) and all the modeling points already described, may be attached to this form of instrument. Fig. 2 represents the instrument in profile ; a front view of the same would represent the shaft of the instrument broad and flat, for a short distance below the point, to compensate for its thinness through its other diameter. Fig. 3 represents another convenient form of instrument for filling front teeth, well adapted to the points represented by Nos. 14, 17, 18, 21, 22, and 23. Its handle is made of ivory, with a silver ferrule, the same as Fig. 2. Fig. 4 is a cheap form of instrument, all steel, which by increasing its size may be adapted to all kinds. It would be well in any event to have two or three dozen of these instruments on hand. The point has been described and represented at No. 3. Three or four of this form of instrument would be desirable, the point of *this* being the largest—the smallest about one-fourth or one-sixth of its diameter.



Miles' Lathe.

This very beautiful and efficient machine, for grinding teeth and blocks, carrying brush wheels and driving burrs, saws and drills, is represented in the wood-cut hereto attached Those provided with two mandrels carry three corundum wheels, a brush wheel, drills, burrs, and saws, at the same time, and are moved either by hand or foot, a crank and also a pedal being provided for the purpose. The motion is as rapid as can be desired, and can be regulated at the will of the operator. Each machine is furnished with four hand rests, by means of which the work can be held steadily in its place. Price $22.

Those with single mandrels carry either corundum wheels, burr wheels, drills, burrs, or wheels, two together, at the pleasure of the workman. Price $15.

It is doubtful whether a more complete or effective apparatus of the kind has ever been offered to the profession.

This machine is designed to be set upon a bench or table, and is alike adapted to the wants of the stationary and migratory dentist.

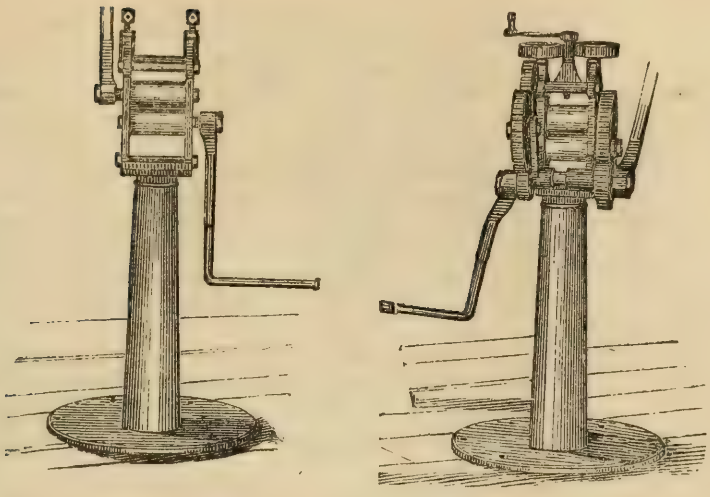
The box in which this Lathe is packed is capable of containing all the implements and stock of a traveling dentist.

EXCAVATORS, BURRS, AND DRILLS.

Small steel handles,	per doz.	1 00	Ivory handles,	0 50
Steel wire handles,	"	1 50	Pearl handles,	
Steel octagon handles,	"	1 25	Ebony handles,	
Steel File cut handles,	"	4 00		

DENTAL CASES,

From $50 to $500.



ROLLING MILLS.

3 inch plain,	35 00	4 inch plain,	43 00
3 “ geared,	40 00	4 “ geared,	47 00
3½ “ plain,	40 00	4½ “ plain,	
3½ “ geared,	45 00	4½ “ geared,	52 00

These Mills are bolted on neat substantial Cast Iron Columns, without extra cost, and can be attached to the floor in a few moments with large screws; when desired without the columns a deduction of $5 each will be made from the above prices.

CHAIRS.

A large assortment of all the most approved patterns, at the lowest manufacturer's prices.

DENTISTS' FILES.

Stubb's Separating Files,	per doz.		Finishing,	per doz.	1 50
Rifflers,			Flat oval.		
Plate, 6 inch.			Molar, curved	per pair,	0 50
“ 5 “			Molar, double edge for either side of the mouth,	each	0 31
“ 4 “					
“ 3 “			Oval stump.	each	0 15
Round, 3½ “			Half round.		
Separating,	per doz.	1 25			

MIRRORS.

Mouth Mirrors.—Small,	0 50	Hand Mirrors.—Small.	0 75

SYRINGES.

Glass.	0 50	Gold.	Silver.

TOOTH POWDER BOXES.

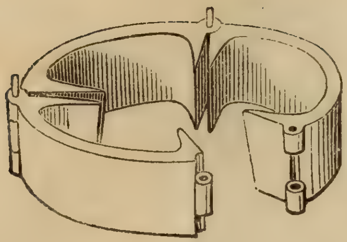
Of Wood. Plain.	per doz.	0 50	Of Porcelain.	per doz.	1 00
Of Wood. Varnished & Labeled,	“	1 00	Of Glass.	“	1 00

SPITTOONS.

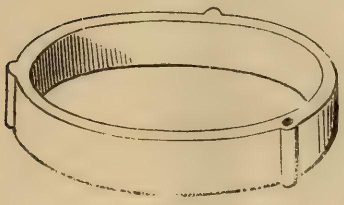
In Mahogany & Rosewood, of different styles, varying in price from $10 to $30 each.

Hawes' Moulding Flask.

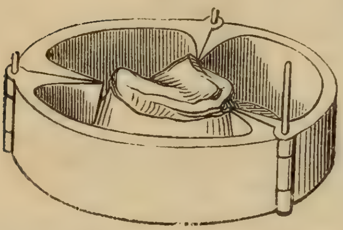
1.



2.



3.



This valuable apparatus for moulding in sand, for dental purposes, will be readily seen to consist of several parts, provided with joints and hinges for opening and shutting as the work requires It removes the difficulty, so generally experienced by dentists, of disturbing the sand by lifting it perpendicularly from the cast, when the gum projects considerably on the labial side, beyond the arch of the jaw above it.

An experienced operator will discover the use and application of this excellent apparatus, with only a very brief description.

Section No 1 represents the lower part of the flask, partially opened, exhibiting the operation of the hinges. Section No. 2, is the upper section which has no joints, and therefore retains the lower section firmly in its place.

Mode of using it.

Close the lower section, No 3, and confine it with a pin in each hinge. Two of the pins are generally stationary. Place the plaster model, when properly prepored, between the converging points, as seen in the cut. Should the model not touch the points, small slips of paper may be placed between the model and the points, in such manner as to separate the sand into three compartments when opening the flask for the removal of the pattern. The sand may now be tamped around the pattern up to the most prominent part of the gum, and it should be finished smoothly araund it, slightly descending towards the model, so as to form a thick edge of sand for the more perfect parting of the flask. The sand and face of the model must now be covered with dry pulverized charcoal, sifted evenly over the whole surface. The moulders keep it in a bag which they shake over the flask.

When this is done, the upper section of the flask is placed upon the lower, and carefully filled with sand. It is then raised from the lower one which may then be parted, by removing the long pin, and the model gently taken away. When closed, and the two put together again and inverted, it is ready to receive the melted metal. Price $2 00.

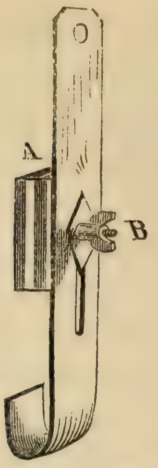
Articles for Mechanical Dentistry.

Wire Drawing Plates.	
Screw Plates and Taps.	
Plate Guages, American.	
Plate Guages, English.	
Scales and Weights.	
Bench Vices.	
Saw Frames. Saws.	
Tooth Polishers, Parmly's.	
Ingots.	
Lathes.	
Copper Pans for acids.	
Alcohol Lamps.	
Oil Lamps.	
Impression Cups, Br'ia.	0 50
Hawe's Moulding Flask.	2 00
Miles' " " "	0 50
Meads' " " "	0 38
Sylvester's " copper.	0 40
Blow Pipes, 9 inches.	0 33
do. 10 "	0 25
do. 11 "	0 31
do. 12 "	0 37

Blow Pipes. 13 inche. s	0 44
do. 14 "	0 50
With chamber, 14 in.	1 00
Bellows Blow Pipe.	5 00
do. and table.	10 00
Self-acting Blow Pipe.	10 50
Plate Punch.	2 50
do. plain.	2 00
do. with spring	1 75
Plate Bending Forceps.	1 50
Clasp Bending Forceps.	1 75
Ladles	0 63
Ladles, smaller.	0 44
Plate Scrapers.	0 25
Plate Burnishers.	0 38
Blood-stone Burnishers.	1 25
Wheel Brushes, 2 row.	0 25
do. 3 "	0 31
do. 4 "	0 33
Anvils.	
Hammers.	
Portable Lathes.	

Hand Lathes.	
Small Circular Saws.	0 50
Burrs for trim'ing solder.	0 50
Gridding Machine, iron.	3 00
do. brass.	5 00
Teeth Holders.	0 31
Tweezers.	0 20
Plugging Pliers.	
Soldering Pans.	
Dentists' Forges.	
Corundum Wheels from ¾ inch to 6 inches.	
Plate Shears, curved.	2 00
do. straight.	1 25
Plate for compressing Pivots.	
Plate for cutting Pivots.	7 00
Continuous Gum Body.	
do. do. enamel.	
Gum Body.	
Gum Enamel.	
Casting Sand.	

CORUNDUM WHEELS.—A superior article of Corundum Wheels, comprising grooved and plain sides, round, sharp, and square edges—of more than fifty different patterns and sizes, from ¾ of an inch to 6 inches in diameter. Prices from 10 cents to $1 00.



Battery for Galvanizing,

This *Galvanic Pile* of alternating plates of zinc and copper, has a curvature at the end for holding a set of teeth on their plate, while immersed in the acid menstruum from which the gold in solution is precipitated.

This is believed to be the simplest and most explicit mode of gilding for Dental purposes now in use.

Price with a screw,	$2 00
without a screw,	1 50

This Company has also another kind of galvanizing apparatus, of excellent construction, contained in a small box for transportation, accompanied by a printed description of the process, compact and neatly arranged. Price $5

MISCELLANEOUS ARTICLES.

Sockets for Excavators	
Burrs for Sockets.	
Drills for Sockets.	
Excavators for Sockets.	
File Carriers.	1 00 to 3 50
Portable Head Rests.	
Pivot Wood.	
Articulators.	0 50 to 1 00
Ambler's Jour of Dent. Operations.	2 00
" Dentists' Account Books.	
Waters' Dental Register.	5 50 to 2 50
Floss Silk.	
Chuck Holders.	
Yellow Wax.	
White Wax.	

Hill's Stopping.		
Porcelain Slabs,	12 inch.	
do.	16 inch.	
Drill Stocks.		
Tooth Brushes,	per doz.	
Dividers.		
Reynold's Dental Detergent.		50c to 1 00
Reynold's Teeth Purifier		0 25
Furnaces.		10 00 to 15 00
Muffles.		0 25 to 0 50
Slides.		
Fire Clay.		
Fire Brick.		
Tiles of all sizes.		
Gutta Percha Bands for Lathes.		

WORKS ON DENTISTRY.

Harris' Practice.	4 00
Harris' Dictionary.	5 00
Bond's Dental Medicine.	2 25
Horner's Students' Guide.	0 50
Arthur on Diseases of the Teeth.	
Flagg on Ether and Chloroform	0 75
Goddard on the Teeth.	2 00
Thompson's Facts for the People.	0 75

PERIODICALS.

Am. Journal of Dental Science.	5 00
Dental Register of the West	2 00
Forcep.	1 00
New York Dental Recorder.	2 00
Dentologia, with Parmly's Notes.	1 00

TURNKEYS.

Assortment of all kinds and prices, from $1 25 to $5 00 Extra Hooks, each 25 cts.

Reynolds' Teeth Purifyer.

The inventor and manufacturer of this elegant article for the toilet, has constituted the N. Y. Teeth Manufacturing Co. his general agent for wholesale transactions with the members of the Dental profession, who desire to supply their patients with the best substitute for the tooth pick that has ever been offered to their notice. It consists of fillets of India rubber, neatly cut by machinery, of proper size to pass conveniently between the teeth for the purpose of removing foreign substances, which cause their decay. Hard and non-elastic tooth picks, cannot be passed between teeth that are very close together. This subjects all closely crowded teeth to the danger of decay. The floss silk sometimes employed for this purpose, is believed to be far inferior to the Rubber, when properly prepared.

Dr. R. G. Reynolds, of Waterbury, Conn., the manufacturer of the celebrated Dental Detergent, advertised on another page, has prepared a neat metallic case suited to the pocket or the toilet-box, which contains a quantity of the prepared Rubber, and allows one end of the fillet to project, for the purpose of convenient use.

When drawn between the teeth, this Purifier removes all foul deposits, and keeps the surfaces of the teeth beautifully polished. No teeth are so near together as to prevent its introduction ; but their close contiguity serves only to flatten the Rubber, and thus spread it over a large surface.

Dentists will be furnished with the Purifier at the rate of $27 the gross, or $2,25 per. doz. This rate at wholesale, will leave a good margin for retail profits, at the discretion of the purchaser.

So neat and useful an article, and one so tastefully arranged, cannot fail to commend itself to the favor of the profession and the public.

Orders respectfully solicited.

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THE FORCEP.

Vol. 1. 1856. No. 4.

REPORT

Of the Meeting of the Western Dental Society at Chicago, Ill., on July 30th, 1856.

Present,

Dr. Allport, Chicago, Ill.
“ I. C. Quinlan, Chicago, Ill.
“ W. H. Kennicott, “
“ Kennicott, “
“ E. Honsinger, “
“ T. P. Abell, “
“ E. A. Bogue, “
“ J. S. Clark, New Orleans.
“ S. F. Knapp, “
“ C. W. Spaulding, St Louis.
“ A. Blake, “
“ Henry Barron, “
“ S. Dunham, “
“ H. J. B. McKellops, “
“ H. N. Lewis, Quincy, Ill.

Dr. A. M. Kelsey, Geneva, Ill.
“ D W. Perkins, Rome, N. Y.
“ H. R. Smith, Terre Haute, Ind.
“ C. P. Fitch, Milwaukie.
“ Hanson, “
“ I. P. Norman, Bockford, Ill.
“ Anderson, Hannibal, Mo.
“ Solyman Brown, New York.
“ Wm. Smith, Ottawa, Ill.
“ A. T. Metcalf, Kalamazoo, Mich.
“ Mansfield, Niles, Mich.
“ E. J. E. Carpenter, Joliet.
“ C. J. Reynolds, Dixon, Ill.
“ A. Gibbs, Chicago, Ill.

In the absence of the President, D. E. Hale, of St. Louis, Dr. Allport, one of the Vice Presidents, was called to the chair.

Dr. Allport said, that in the unexpected absence of the President, he should detain the meeting with but a very few remarks.

A few years had effected a remarkable change in the Dental Profession. Formerly a knowledge of its more elevated practice was confined to the larger cities. Now the science of Dentistry was extended over the whole country, north, south, east and west. This was the normal result of a generous liberality on the part of a few eminent practitioners, who had made known the principles and practice of Dentistry to their professional brethren, as well as to students in the art, both privately and by means of periodicals and colleges, established expressly for the purpose, in various parts of the country. The names of Parmly, Harris, Maynard, Taylor, Townsend, Dwinelle, Solyman Brown, Dunning, Westcott and others, would readily occur in this connection.

In pursuance of the same object, and in imitation of these noble examples, we organized this Society last April, in the Great West, and have now met for mutual instruction and improvement.

It was then, on motion, resolved, that Dr. Solyman Brown, of N. Y., Drs. Clarke and Knapp N. O., Dr. Perkins, of Rome, N. Y., and Dr. Smith, of Terre Haute, Ind., (one of the Professors of the Cincinnati College of Dental Surgeons,) be invited to participate in the business of the present meeting.

After reading and approving the minutes of the last meeting, a committee consisting of Drs. Blake, Dunham and Clark reported as the special business of the session, the following subjects for discussion, viz., The Extraction of the deciduous teeth of children ; The Plugging of the fangs of teeth; The use of Gutta-Percha as the basis of artificial teeth ; and Crystal Gold.

This judicious selection of subjects was approved by the meeting.

Dr. Clarke opened the discussion on deciduous teeth. He remarked that the subject was one which had been too much neglected by the profession, and yet was one of pre-eminent importance. If deciduous teeth are removed, as a general rule, it ought to be by the absorption of the roots in proportion as the permanent teeth advance to supply their place. The use of the first set is to prepare the way for their successors, and to perform the uses of the second set of teeth until the gums are fully developed to receive them.

The wholesale extraction of deciduous teeth, for the purpose of gratifying nurses who dislike the crying of children, or parents who are ignorant of the uses of these organs beyond the mere mastication of food, is a very bad practice. He does not extract the tenth part of those which are presented to him for that purpose.

These teeth preserve the form of the jaws, and unless they become loose by absorption of the roots, and no longer serve that purpose, as a general rule should never be removed. Nature generally removes them in her own right time, and by means altogether preferable to the forceps of the dentist.

Dr. Kennicott inquired of Dr. Clarke what had been his successes in stopping deciduous teeth.

Dr. Clarke responded that he had never courted success in that line. He called it only *stuffing*.

Dr. Perkins remarked, that the development of the human physical system was harmonious throughout, and simultaneous in all its parts.

He described the development of the two successive sets of human teeth. In treating the teeth of children he always regards primarily the welfare of the adult teeth which succeed them. The teeth of children are now developed much earlier in this country than in former years, the probable result of the different habits of society at successive periods.

Dr. Knapp inquired of Dr. Perkins whether he would extract deciduous teeth, when they were decayed to the nerve; and was answered that it would depend somewhat upon circumstances.

Dr. Knapp remarked, that children should be taught to exercise their teeth in the mastication of hard food, which is necessary to their healthy development.

Dr. Clarke remarked that Dr. Knapp had been trying the experiment for four or five years, of brushing his children's teeth morning and evening, with his own hands, not being willing to entrust the experiment to nurses, and that his success in preserving them seemed thus far very perfect.

Dr. Perkins does not allow his children to use vinegar; in consequence of the deleterious effects of all acids except those of the milder forms, such as found in fruits. He does this by way of experiment, as he thinks vinegar injures the tender enamel of children's teeth.

Dr. Dunham inquired whether there is any particular advantage in filling children's teeth, to which Dr. Clarke replied in the negative.

Dr. Allport stated that he had been in the habit of doing so, when it seemed proper. When practicable he files instead of filling. He thinks that the subject of keeping children's teeth clean is of very great moment; on which point dentists ought to take great pains to instruct the public. Adjourned till 2 P. M.

AFTERNOON SESSION.

The Subject of *Children's Teeth* was resumed.

Dr. Clarke spoke at some length of the action of acids on the teeth; acids in food, acids in the secretions, and acids generated by foul deposites between and around the teeth.

Dr. Perkins believed that the luxuries of the present age, in this country, are destroying teeth with alarming rapidity, by vitrioling the general constitution, as well as by direct action on the teeth.

Dr. Quinlan thinks that the experiments already made show clearly that acid substances injure the teeth.

Dr. Fitch thinks the great question is, what acids the food develops, and what action they have upon the teeth, and believing that the subject had been sufficiently discussed for the present, he suggested that the proper topic for the afternoon's discussion, is, the propriety of filling or plugging the fangs of teeth.

Fang Filling

Dr. Clarke said that the filling of the fangs of teeth was practiced long before he was in dental practice. Drs. Harwood, Maynard and others, were before him in this department of the art of Dentistry. His present confidence in *fang filling* is greater than he had ever anticipated.

The method of operating is to draw the temper from a fine broach and cut barbs like those of a fish-hook, covering one entire side, leaving the other side perfectly smooth. With the smooth side against the side of the orifice, he then thrusts the instrument to the bottom of the nerve cavity to the very foramen of the root; whereupon he quickly rotates the instruments so as to bring its barbed side in contact with the nerve, and then extracts it from the cavity whereby the nerve is removed. The cavity is farther cleaned with small instruments, when it is ready for the filling. In filling the cavity I use one instrument the temper of which is drawn to the blue, and wrap around it a fold of gold foil, which I thrust to the bottom of the root, and press to one side of the cavity. The same operation is repeated till the entire nerve cavity is firmly filled with the metal.

If the disease is wholly eradicated, and the cavity entirely and faithfully filled, a great change takes place around the tooth immediately. But we should not promise our patients too much. Fang filling is uncertain. We do not cure the disease of the tooth; we merely remove obstructions to its well-being, and Nature performs the cure.

Dr. Knapp said :—The removal of the pulp of the fang is sometimes difficult, also the filling of the fang, especially of the molars. Kreosote is the best agent for cleaning out the *pus* from the cavity.

Dr. Anderson uses Kreosote and Arsenic to cleanse a nerve cavity and prepare it for filling. These substances are introduced on cotton by means of a broach.

Dr. Kennicott frequently extracts the nerve by the use of a piece of hickory, and sometimes stops the cavity with a well fitted hickory plug.

Dr. McKellops uses nitrate of silver, 60 grains to the oz., to clear out the fang, and employs an instrument manufactured by the New York Teeth Manufacturing Company, which is excellent for the purpose.

Dr. Perkins uses the Chloride of Soda to inject the fangs of teeth. Sometimes the fang has an ulcer when there is no other disease in the tooth.

Dr. Clarke treats ulcerated fangs by thrusting Kreosote up the orifice on cotton, and leaving it there from time to time for some days.

Dr. Dunham did not think favorably of the hickory plug spoken of by Dr. Kennicott.

Dr. Clarke stated that in cases where the fang of a molar with a lateral decay to the nerve, required to be stopped with gold, he was in the habit of drilling a hole through the grinding surface of the enamel, in order to get access with his broach to the orifice of the root.

At this stage of the proceedings, on motion of Dr. Allport, the following gentlemen, not residents within the geographical limits of the society, were elected as honorary members:

Dr. S. Brown, of New York.
" Perkins, of Rome, N. Y.
" Smith, of Terre Haute, Ind.
" Clarke, of New Orleans, La.
" Knapp, " "
" Knapp, of Jackson, Miss.

EVENING SESSION.

SUBJECT—*Gutta Percha as a base for teeth.*

Dr. Dunham thinks Gutta Percha very useful in cases where the teeth have been recently extracted, and the alveous very prominent, especially about the eye teeth. In these cases it is often very difficult to use metallic plates without making the lips too prominent. He prefers to use a thin plate of Gutta Percha rather than a gold plate, the ends of the teeth resting on the gum without a plate in front.

Dr. Smith has used Gutta Percha in two cases, but does not like it; especially the samples which he had, and which were said to have been made by Dr. Slayton. The texture and color were both bad.

Dr. Quinlan is of opinion that Gutta Percha will be found in many cases to be very useful.

Dr. Spaulding uses gold plate for temporary cases as the best material. When the gum changes much he uses Gutta Percha to fill up the interstice or chasm between the plate and the arch of the palate and the alveolar ridge. This plan he finds to work well.

Dr. Clarke does not use Gutta Percha for permanent sets of teeth, but nevertheless regards it as useful for many purposes, particularly when a piece of work constructed upon it brings the patient back in quick time for a new set on proper material. He occasionally uses it for patching up old work, which is generally neither very pleasant nor very profitable to the Dentist. He thinks that when a Gutta Percha plate wears through very soon, it is owing to the material having be overheated, or burned by the lamp.

For lower pieces where only the front teeth are gone, he likes Gutta Percha, yet he has no reliance upon it for any but temporary sets.

SECOND DAY.

The Secretary read the minutes of yesterday, which were amended and adopted.

Dr. Clarke was requested by Dr. Spaulding to state whether solder made with arsenic, will eat up the platina plate.

Dr. Clarke thinks it will if the arsenic is in excess. The sanguine hopes at first expressed, have not been fully realized. The experiments have not thus far been fully satisfactory, but he hopes the difficulties will be ultimately overcome.

Dr. Honsinger had one job of continuous gum, which was not successful, and only one. He proceeded to describe the case minutely. A set of gum teeth had failed in the mouth. He substituted continuous gum. This soon lost one molar, and the gum was broken and loose. Made a new set, and that gave way. Then struck a second plate and added it to the first, bringing the edge over the front enamel. This also gave way, probably on account of the many bakings.

Dr. Clarke advised Dr. H. to send his subject to Dr. Harris, of Philadelphia, who once had a similar case, which he made of cast iron, the patient wearing it to the present time.

Dr. Spaulding said, in relation to the articulation of continuous gum work it must be good, but when the antagonizing teeth are gone, the danger of unequal pressure can hardly be avoided.

Dr. Perkins had encountered the same difficulty. In such cases he has made the backing and front part of the plate exceedingly strong, and put a block of platina over the place of strongest pressure.

Dr. McKellops has done a good deal of continuous gum work. One piece after 6 months, exhibited the four front teeth projecting forward. He split the bakings and turned one half the back up on the plate; then baked carefully; merely soldered the backs to the plate, not the pivots.

Had a case where the patient had worn gold plate; first made a block —then substituted gum work. The principal strength of this work is in the baking; the first bake of the body should be but just sufficient to cause the material to adhere.

A young gentleman present was called on by the President to explain his method of making gum work, described the process generally, but owing to the want of time, too briefly to be of much practical use.

Dr. Blake thinks that the baking should be *progressive*—each baking more than the former, fusing the whole mass.

Described a case of filling up the cheeks, which was fully successful, and is of opinion that continuous gum work is of considerable use to the profession.

Dr. Clarke says, of air chambers, that sometimes they are best, but not always. When the arch of the mouth has a hard protuberance, an air chamber is necessary ; but not when the arch is spongy. He makes a large air chamber in the former case. Sometimes has difficulty with both kinds of plate.

In regard to articulation, the best teeth for use are those where the biscupids are pitched inward. But you cannot follow the natural laws, in articulating artificial teeth. In teeth set by our best operators, the *circle* is more perfect than in the natural teeth.

Dr. Dunham is pleased with the character of the discussion this morning. Is obliged to Dr. Honsinger for his particular delineation of his *failures*. This is even more useful to us than a description of our *successes*.

Dr. Dunham sometimes uses air chambers in the cases stated by Dr. Clarke, and does not use them in soft spongy gums.

Describes a plan of making air chambers. Cuts a piece of tin an inch long and half or three-quarter inch wide ; after swedging his plate he places the tin in the female cast and strikes the plate over it. This prevents the rocking.

He takes upper impressions generally in wax ; lower ones in plaster. When the wax is introduced, he directs his patient to press his fingers against the cheek and wax over the molars, whilst he presses up the cup to its position. He presses the front wax a little inward, after taken from the mouth.

Dr. Bogue wished the opinion of gentlemen as to air chambers.

Dr. Dunham generally takes three casts, and selects the poorest to swedge on at first, then if the fit is bad, on another, and so on to the last, if necessary.

Dr. Spaulding uses air chambers when the hard prominence exists in the arch. In almost all cases of partial sets he uses air chambers.

Makes the edge of the chamber square and not rounded, to prevent the expansion of muscle into the chamber.

In order to produce the square edge he cuts out a piece of the thin plate. Though shallow, the chamber will not fill with flesh ; and its impression is scarcely perceptible to the eye. Considers them better than deep chambers.

On the subject of impressions he has settled upon wax exclusively unmixed.

Uses sheet zinc to strike off a preparatory plate or cup. In this plate he places sheet wax of equal thickness and warmth. When the gum is spongy he cools the wax a little.

In lower plates when the sheet of wax is placed on the zinc plate, he gently presses the wax on the zinc die, to give an *approximation* to the true forms. Takes cold water into the month to cool the wax.

In lower plates it was his custom to limit the plate at the movable muscles. Draws a line on his plaster with a pencil where he judges the muscle will move. Increases the suction by remodeling the edge of the plate in front.

One of the most difficult points to fit is behind and around the condyle of the jaw. Attaches the rim to the edge of this curved edge of the plate. This curved edge not only increases the suction, but may be made to fill up the mouth and keep out the lip as desired. Around the condyle it is sometimes necessary to cut out a wedge of the plate. Sometimes injects cold water about the condyle to harden the wax before removing it.

The zinc plate may be ¼ of an inch wider than the gold-plate. Does not spread the zinc plate at all at the sides.

Dr. Dunham asks whether Dr. Spaulding ever springs the zinc plate, by unequal pressure. The body of wax must be as thin as possible, and not break, also the wax must be very soft.

A hole must be in the centre of the plate to let in the air before removing.

Sometimes he pears off a little of the plaster cast in front, to compensate for the imperfect fit over the edge of the alveolus.

Dr. Smith, of Ottawa. wished to know whether an *atmospheric pressure plate* is the same as a *suction plate.*

Dr. Dunham differed from Dr. Spaulding on the subject of atmospheric pressure; he believes that atmospheric pressure does exist, because if a small orifice be made into an air chamber the plate will drop.

Dr. McKellops must say of central cavities that they are useful. Thinks that in flabby mouths plaster is better than wax.

Dr. Spaulding responds that wax impressions caused no more necessary pressure than plaster, if the wax is sufficiently warm.

Engrave a groove in the exact place on the plaster cast where the plate is to terminate on the palate. This forms a flange on the plate for its more perfect adaptation.

Dr. Anderson has thought the air chamber was sometimes used for ornament. Thinks the prettiest form of a plate is that of nature. Thinks the pressure should be removed from the palatial arch for the purpose of avoiding the rocking of the plate. For this purpose he removes an equal surface of the plaster cast, excepting near the posterior part.—This plate will ultimately settle about enough to fill up the cavity. Thus the pressure is brought upon the alveolus where it belongs.

Dr. Clarke says, we have two principles, viz., *cohesion* and *atmospheric pressure.*

Capillary attracted is a very different matter; it pertains to fluids and small tubes, like those in the sponge.

Dr. Fitch denies that cohesion or attraction has anything to do with the plates of teeth. They adhere from atmospheric pressure. Has found air chambers in some cases important.

Dr. Spaulding thinks the perfect fit of the margins of the plate more important than the fit in its middle parts.

Dr. Perkins denies cohesive attraction and asserts atmospheric pressure, in the case of plates.

Professor Palmer, of the Michigan Medical University, was requested to explain the terms cohesion and adhesion, which he did.

Two kinds of mechanical attraction—all matter in creation has the attraction of gravity, operating at all distances. Also an attraction when brought into absolute contact, called cohesion. He says there is no essential difference between cohesion and adhesion.

Thinks the *adhesion* by the atmosphere is not identical with the *cohesion* of the books.

Adjourned till half-past 2 P. M.

SECOND DAY—Afternoon Session.

Dr. McKellops moved that the constitution of this Society be published.

Resolved that the Secretary be requested to furnish Dr. S. Brown with a copy of the constitution for publication in the Forcep.

The subject of gold as fillings for the teeth, was the order of business.

Dr. Clarke has found that Crystal Gold has already far surpassed his expectations. He has seen several teeth filled by Dr. Allport, of Chicago, that surpass anything he had ever before seen.

An example of two central incisors from which the ends of the teeth had been removed one fourth of its length. These plugs have now stood about 19 months, and are as perfect as at first. He has never seen anything so fine.

This class of operations has of late done more to elevate the profession than anything else. The class of men who are doing this kind of work encourage us all to make high endeavors in our art.

In thus complimenting Dr. Allport, he does not mean to say that he is going home to throw away his tools, and turn blacksmith. No such thing, but he is going back to endeavor to imitate these great examples.

Dr. Smith once thought he could plug a tooth tolerably well. But he had lately seen a first bicuspid, filled by Dr. Allport, two thirds of which above the gum was of crystal gold. It preserved the original form of the tooth and performed all the purposes of mastication.

Dr. Knapp (of N. O.) thinks that cylinders are the best form of gold for plugs as a general thing. This system of cylinders used by Dr. Clarke, he thinks is new. That any former methods claimed to be such were quite different from this. Crystal gold will doubtless succeed in some cases, especially in building up parts of teeth, such as had seen of Dr. Allport's, better than any kind of foil.

Dr. Knapp, of Miss., was here named and elected an honorary member of the Society.

He returned thanks for the honors, and stated that he has succeeded better with cylinder fillings than with gold in any other form.

Dr. Spaulding stated that he had regarded crystal gold as the very best material for filling very shallow cavities ; and also in building up structure, the crystal gold is the perfection of material.

Cylinders will make the best filling in the shortest period of time, and with sure labor.

The first specimen of cylinder stoppings I had seen were by Dr. O. P. Laird, of Columbus, Ga., when he was in Savannah. He saw also ten years ago plugs by Dr. Badger, which were very excellent, better than himself can do. He had understood that Dr. Badger used cylinder plugs. He formely suggested to Dr. Clarke the propriety of seeing Dr. Badger—but Dr. Clarke has made improvements in the method of forming cylinders. He does not wish to deprive any gentleman of his laurels.

On the whole he regards cylinder plugs as equal to any other, not excepting crystal gold. The plugs of ordinary form, of crystals and cylinders respectively, are so nearly equal that the difference is not worth regarding.

Dr. Clarke has always aimed to accord to another dentist all his rights and improvements. In the winter of '49, in New Orleans, he formed the acquaintance of Dr. *Badger*, and was perfectly satisfied that Dr. B. could excel him in filling teeth.

He gave me a hint of his method, by rolling a piece of leaf into a cylindrical form. I then entered upon my plan of rolling cylinders on small tweezers, such as I had seen in the hands of Dr. Badger, which he used for another purpose.

I have stated often that I received my first idea of cylindrical fillings from Dr. Badger, I have claimed nothing for myself. Whatever I have belongs to the profession.

Dr. Allport thinks the profession are pretty well aware who is entitled to the credit of inventing this method of filling teeth, and whoever he is, he enjoys the satisfaction of knowing it.

Dr. Knapp (younger,) says there is nothing before this body to show that Dr. Laird ten years ago filled teeth with cylinders.

Dr. Kennicott says that as long ago as 1820 he saw Dr. Cox in New Orleans fill teeth with cylinders.

He has failed with crystal gold, many times. Not a particle of moisture must touch a gold filling of any kind.

Dr. Honsinger thinks that crystal gold has mostly failed in consequence of having been introduced in too large quantities. He uses very small instruments. Has built up teeth when one-third gone.

Dr. Bogue gives his testimony decidedly in favor of crystal gold.

Dr. Clarke has used but little crystal gold, but wishes to know whether the serrated instruments do not fracture the surface of the cavity, in consequence of their sharpness.

Dr. Perkins—I have some experience in this department of filling with cylinders.

If any persons will come to Rome, I will show them fillings built up with foil by Dr. Allport 8 years ago, in fine condition now.

I have used Watts' gold from the commencement of his manufacture, and regard it a very useful adjunct to foil. Has recently used about one-third crystal gold.

Does not think a person ought to say that foil cannot be made to perform anything that crystal gold can do. Nor can he assert positively that it can.

He described at length the manner of stopping with crystal gold.

Dr. Clark requested that Dr. Allport would describe his method of stopping with crystal gold.

Dr. Allport could hardly express his gratitude for the kind and flattering compliments which had been bestowed upon him.

Does not use crystal gold exclusively. Foil constitutes about two thirds of his fillings. Sometimes he uses pellets, and cylinders and crystals all in the same cavity. The use of crystal gold requires four times the time for insertion that is required by foil.

Never saves any more of the enamel than is strong and healthy—but saves all the front possible. He presses the crystals in the direction of the length of the tooth as much as possible. Uses serrated instruments, small and sharp.

If a plug gets wet when of foil or pellets, or cystals, it can be cleaned by chloroform and wiped dry with bibuolus paper.

The credit due to crystal gold is attributable to Dr. Watts. Since July last his gold has been good, very good—all that is required.

He can build upon a surface after it has been polished, or upon solid metal.

Dr. Spaulding explained the reason why serrated instruments packed the crystals in such a manner as to cause them to cohere in a mass, but it must be borne in mind that the serrated points do not push all parts of the crystals with equal solidity, at the polished surface they become nearly so.

Dr. Durham does not think he could stop front teeth better with crystals than with foil ; he never allows the force to fall wholly upon one tooth, but introduces a wedge between the teeth, to connect the force with two or more teeth.

The Society next proceeded to the consideration of

Continuous Gum Work.

Dr. Spaulding thinks the gum and body may be made strong enough.

Dr. Kennicott gives his word for continuous gum work and esteems it the perfection of artificial teeth.

Dr. Clarke is using it pretty extensively, and thinks it occupies an important place in the profession. Deems it as useful as any kind of work that has ever been made. It is artistic in an eminent degree, and is not liable to the objectetions raised against Gutta Percha, that it lowers the standard of professional skill.

Dr. Spaulding assents to all that Dr. Clarke has said in favor of Continuous Gum, yet there is one serious objection, which is the liability of breaking the teeth either in the process of manufacture, or by a fall afterwards, in which case it is a sort of work very difficult to repair.

Dr. Dunham regards the breaking of the gum as a much greater objection than the breaking of the teeth. This he has not been able to avoid.

Dr. Kennicott has seen gum work that nothing else has ever equalled. It can be adapted in color both of gum and teeth to suit the complexion The frequent heating of this work is very liable to injure the teeth.

Dr. Perkins regarded it as unfit in all cases.

Dr. Smith desired to know whether tobacco did not make Gutta Percha sets very disagreeable. Dr. Clarke replied that a smoker would find his teeth disagreable.

Dr. Dunham has charged $75 for sets of GuttaPercha teeth, which is the regular price in St. Louis. Thinks twenty-five of his patients are wearing them comfortably.

Dr. Allport has used it in cases where it answered a very good purpos for temporary work.

Dr. McKellops moved that when the Society adjourn it be to meet the city of St. Louis, on the 3d Wednesday in May next.—Adjourned.

In the evening of the 31st an entertainment was given by the dentists of Chicago at the Briggs Hotel. In addition to the many entertaining and instructive speeches by the members of the Dental profession, Dr. Palmer, one of the professors of the Michigan Medical University, who knows exactly what to say, with decided ability to say what he thinks and wishes in the most fluent and condensed phraseology, made two eloquent addresses, with which the members of the Socicty and invited guests were greatly delighted.

The Chicago Meeting of the Dental Society of the West will long be remembered with pleasure and profit by those present.

SOLYMAN BROWN.

[From the Dental Register of the West.]

ALLOYS.

BY GEORGE WATTS, M. D., D. D. S.

Read before the Mississippi Valley Association, Feb. 23d, 1855.

(Continued.)

The increased fusibility of metals when alloyed, enables us to unite two metals, or different pieces of the same metal, by a process called soldering. In the preparation of solders, several points require attention. They must be more fusible than the metal, or metals, to be united, and must be composed of metals having a strong affinity for those to be soldered together. Each metal, therefore, to a certain extent, requires a solder peculiar to itself. A very convenient though not a very fine gold solder is made by adding to any quantity of American coin, one-third its weight of silver and one-fourth its weight of copper. This is about the same as Harris's No. 1, and answers all ordinary purposes. Many formulas might be given, but those wanting them know where to get them.

Silver solder is the only alloy of that metal of use to the dentist. If silver plate be used, as it may be for temporary work in healthy mouths, the metal should be pure. This may be soldered with silver coin, or with any of the finer silver solders.

Some of the alloys of copper are interesting and useful to the mechanical dentist. Of these we may mention the ancient bronze, composed of tin, and copper, and brass, the well-known alloy of copper with zinc. The former of these makes an excellent male cast, but the high temperature at which it fuses, and its affiinity for oxygen, at the melting point, render it rather inconvenient for ordinary use. From its hardness the plate will be "driven home" without any flattening of the prominences on the ridge. When used it should be melted under rosin, powdered charcoal, pine sawdust, or some similar combustible substance, and, like all other alloys, should be taken from the fire and poured as soon as fused.

Brass, when pure, consists of 63 parts of copper to 32 of zinc, being a definite compound, composed of 1 equivalent of zinc and 2 of copper. The brass of commerce is an uncertain compound, containing tin, lead, and other alloys. This is a convenient substance in the laboratory for various incidental purposes not directly pertaining to mechanical dentistry. Cheap and serviceable blow-pipes are constructed from it, and every dentist should be skilled enough to make his own, as a majority of those in market are unfit for use. It may be soldered with silver coin, any of the silver solders, or the common brass solder, composed of 2 parts brass, 1 of zinc, and a minute quantity of tin. It is sometimes used for casts, but is not reliable, on account of its shrinkage in congealing and cooling.

Commercial zinc is an alloy of zinc with iron, lead, cadmium, arsenic, &c. On account of its cheapness, and because it shrinks but little in congealing and cooling, it is much used for casts. It answers a tolerable purpose for ordinary cases, but its shrinkage is often a serious annoyance. The thing needed for casts is a convenient and cheap metallic substance which *expands* in congealing, precisely as much as it shrinks in cooling from the point of congealation to the ordinary working temperature. An alloy composed of 4 parts of zinc to 1 of tin, fulfills these indications. It forms a very hard cast, and may be immersed in lead without the ordinary protection of whiting or lamp-black. Of the alloy of zinc with copper we have already spoken.

Equal parts of tin and lead make a good alloy for female casts. It is harder than either of its constituent metals, melts at a lower temperature than either of them, and as it shrinks less in cooling, gives a more correct counter cast. The attention of the profession was directed, some years ago, by Dr. Van Emon, to an alloy of tin and antimony, composed of, perhaps, 5 or 6 parts of the former to 1 of the latter. This is a good article for casts, can be used with lead for the female casts, and shrinks but little, if any, in cooling. It is easily oxydized, and should therefore be fused with the proper precautions, and taken from the fire as soon as melted. From our own experience, we consider the zinc and tin alloy above referred to, preferable to this or to any other we have used.

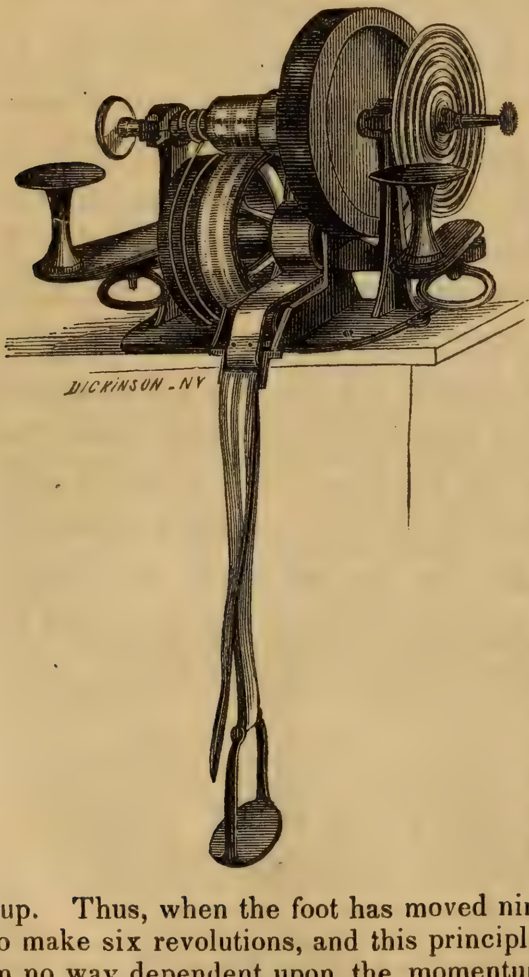
Two parts of lead, one of copper, and one of antimony, is the formula for Lassaigne's type metal. It makes a tolerable cast, expands slightly in congealing, but is rather brittle.

Of the alloy of platinum with gold we have already spoken. With steel it forms a tough, strong alloy, an excellent material for excavators and pluggers. The best proportion is said to be 1 part of platinum to 100 of steel. None of its other alloys are of importance to the dentist.

The only remaining alloys interesting to the dentist, that we now think of, are the mercurials. Of these we have nothing to say at present, and we hope nothing further need be said. Our views on the subject are known to the Society. We hope the whole matter may rest.

HELME'S RATCHET LATHE.

To the Editor of the "Forcep."



DEAR SIR :

In compliance with your request for a written description of my Lathe, I will, as briefly as possible, explain the principle on which it acts.

In the common foot lathe the motive power is applied by means of a treadle to a crank, on one half of its revolution, the *momentum* or accumulated force in a heavy fly wheel, causing it to complete an entire revolution. Hence an efficient crank lathe must have a fly wheel more or less heavy, according to the work to be done.

In the Ratchet Lathe the force is applied directly to an arbor, on which a small balance wheel is placed, the driving band is so arranged by means of a long lever, (or, as in my lathe, by a small multiplying pulley,) that a belt, or band, about two feet long is unwound from it at every downward stroke of the foot in the stirrup. Thus, when the foot has moved nine inches, the spindle is forced to make six revolutions, and this principle makes the power of the lathe in no way dependent upon the momentum of a heavy wheel. The object of the small wheel merely insuring a steady onward motion during the instant required, by a spring, to raise the treadle for a renewal of the stroke. These remarks are more particularly applicable to the lathe when used with a slow motion, and with all the force the foot of the operator is capable of exerting against any resistance applied to it, so that the power being independent of the momentum of the fly wheel, as before said, is limited solely by the strength of its materials and the foot which drives it.

For rapid motions, the velocity is not dependent upon the frequency of the strokes of the foot, but rather upon the suddenness with which it is made, and for all common occasions for which a dental Lathe is required, an *occasional* impulse will be all that is required, the foot, in the meantime, resting upon the floor, until the speed slackens, when the spring being allowed to recoil, it raises the stirrup ready for another impulse.

The ratchet which permits the continuous from the reciprocating, is neatly enclosed in the spool, or collar, to which the band, or spring, is attached, and which turns alternately back and forth upon the arbor, or spindle. The pall, or catch, is not operated by a spring, but by means of an adjustable friction, which causes it to play into and out of the ratchet teeth without that clicking sound heard in winding clocks and watches.

The Ratchet Lathe is not new, though being somewhat more expensive they have never come into general use, and are but little known, even among mechanics. The improvement which I have made has simplified and cheapened it, and at the same time compacted it so much, that it occupies the least possible room in the laboratory, for it may be put up on a firm shelf, or bracket, eight inches wide and ten inches long. As in my case, there are doubtless many other dentists with a paucity of office room, who could readily find room almost anywhere for this Lathe without inconvenience.

This Lathe is the result of much study, with the design of superceding all other Dental Lathes, and certainly, if the capability for the greatest power and speed in the smallest possible space, and at a moderate cost, is the great object to be attained, it appears to me that this Lathe Machine is without a rival. W. H. Helme.

PHILADELPHIA COLLEGE OF DENTISTRY.

307 Spruce St., Philadelphia,
June 17th, 1856.

Messrs. Editors of the "Forcep."

"During the commencement exercises, an incident occurred that struck us as being something novel in the history of Dental Surgery.

"The President (we presume) of the Board of Trustees, or Corporators, read the authority for conferring the degrees, and handed the diplomas to the Graduates. After they had all been conferred, and the Graduates had resumed their seats, the President announced that the

Honorary Degree had been conferred upon two persons, stating their names and residences, which we have forgotten, (further than that they lived in that small part of the State of Camden and Amboy known as New Jersey). The peculiarity of this procedure consisted in the neglect, on the part of the president, to state that these Honorary Degrees had been conferred upon the said parties by the Board, and against the wishes of the Faculty, who had, we understand, entered their protest against any such action.

"We learn that among the Board of Corporators there is but one Dentist to be found. The Faculty of the Colleges are, on the contrary, all practical and practicing Dentists. They are considered as the responsible parties by the profession, and are unquestionably the only persons connected with the institution who can be considered as judges of professional ability. Looking at the question in this light, we must confess that the action of the Board of Corporators argues for them an amount of presumption and a want of principle that might be expected among politicians, but that no one would look for among the Trustees of a Scientific or Literary institution. Of course, no gentleman would accept a degree conferred under such circumstances.

"After the commencement excrcises were over, the guests, students, &c., adjourned to Parkinson's, where a collation was disposed of in a manner satisfactory to all parties. A number of speeches were made, and the evening passed off very pleasantly.

"Prof. Arthur took occasion, in a very frank and manly address, to protest publicly against the procedure of the Board of Corporators alluded to above. His remarks were received with unqualified applause, and an enthusiasm which evinced most satisfactorily that the sympathies of the Dental Profession were on the side of the Faculty.

"We have since learned that at a special Faculty meeting, held on Monday evening last, the Faculty resigned. This seems a most summary method of blotting a very flourishing institution out of existence; but we do not see that any other course was open to them.

"If the Board of Trustees had the power and inclination to grant degrees against the wishes of the Faculty, they would soon begin to refuse degrees to those whom the Faculty thought were entitled to them. The truth of the matter is, that the odium of the ruin of the school must rest upon the heads of those who, by their most unwarrantable and unprincipled behavior, have compelled the Faculty to make choice between their self-respect and their position in the College. Their action in the matter merits the thanks of the Dental profession."

Sirs:—In looking over the above, it seems to me to be a one-sided statement in relation to the proceedings of the Board of Corporators of the Philadelphia College of Dentistry, "and as one side of a story is good until the other is told," will you allow one somewhat familiar with *some* of the facts in the case, the privilege of presenting to the Profession the other side, as it may possibly present another phase to the whole proceedings. The profession will have better opportunity of judging "*upon whom rests the odium of the ruin of the school.*" The Board of Corporators of this school consists of members of the bar, medical profession, and merchants, of high standing in the city, all of whom are as far above reproach or suspicion of wrong doing as any other corporate body that can be found; the president has represented the city in its Legislative capacity, and was a member of the same when the charter was obtained, and must needs be looked to in the corporate capacity of the Board to confer Honorary Degrees. The whole question of this difficulty hinges upon the power of the Board to confer such degrees. If the power is admitted, the Faculty are entirely in the wrong; if this is denied, then the Board was wrong and overstept their duty, and can be impeached before one of our courts, or Legislature, for violating the trust confided to them.

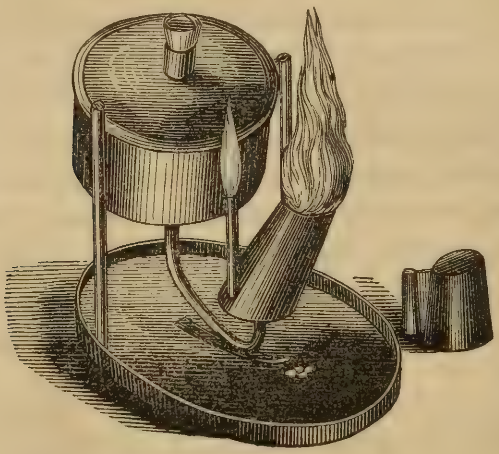
It appears that at a meeting of the Board on the eve of the Commencement, and without whose sanction the Graduates could not obtain their diplomas, the Honorary Degree was conferred on Dr. Burr of this city, an old practitioner. Joel C. Harris of New Jersey, was then nominated and conferred, a gentleman of reputation and eight year's practice, who had been attending upon a portion of the lectures of the College the past winter, and who the Dean admitted to the Board, possessed all the qualifications for a Degree. In consequence of indisposition, he was compelled to leave the city, and his State, to seek a more congenial clime in hopes of recovering his wonted health. The Faculty at once take umbrage at this nomination, or at the parties making it. Dr. Debouchet, the secretary of the Board, is impeached by the Faculty as surrepticiously causing the name of Dr. Harris to be added to their list. The Board of Corporators appoint a committee of investigation of the charges, hear the complaint of the Faculty, and the defence of the member of the Board, report to the Board their perfect ability of conferring such Honorary Degrees without any regard to the Faculty, and sustaining the member of any imputation of misconduct, deeming the matter a personal quarrel between the parties, and request to be discharged from any further consideration of the subject, consequently the Faculty had to back down, admit their error, and back out.

What this "frank and manly address" was, "protesting against the proceedings of the Board," at the Commencement supper, I am unable to say, not being present. Certainly something more than a Solomon must have come to town, for a poor, miserable dentist to beat our Philadelphia lawyers in Dental Jurisprudence. Finally, to show their inability to exist together, the Faculty resign. Before, however, yielding to this resort, three of the Faculty come into the Philadelphia Association of Dentists, being members thereof, and impeach the Secretary of the Board, Dr. Dubouchet, of plagiarism, for publishing a Hand Book of Dentistry *six years before he was constituted a member of the Association.* Surely this was carrying the war into Egypt as a salvo to their wounded pride—they succeeded in removing him as a member from the Association, by drumming in its country members, some of whom had never been seen at its meetings before. It yet remains to be seen whether they will succeed in removing him as a member from the Board of Corporators. I trow not "whether the summary manner of blotting out a flourishing institution by the resignation of its faculty" is a natural consequence, remains yet to be seen. Such has not been the case with our Medical Institutions by the resignation of their Faculties, and I doubt the *deductions* of the editor of the Recorder as regards this institution. Just as much talent can be found to fill the vacancies as occupied the chairs before, and as we have six or seven Medical Institutions in our city, I do not see why we should not have two or three Dental ones. I have extended these remarks further than I intended, they may be necessary for a full comprehension of the difficulty "that struck the Editor of the Recorder as novel in the history of Dental Surgery."

Yours in haste,

H * * * * *

FRANKLIN'S SAFETY SOLDERING LAMP.



Price $1 50.

☞ We have been requested to publish the following Receipt: *Unshrinkable Metal.*—Copper 1, Antimony 2, Tin 6.

DENTAL COLLEGES.

In perusing the published statements of the Baltimore and Philadelphia Colleges, we are strongly impressed with the superior advantages of the former Institution in imparting a thorough practical knowledge of the science and art of Dentistry. The following table, taken from the official publications, show the comparative amount of actual practice to be obtained in the respective operating rooms and laboratories of these two Institutions. The greater number of operations, taken in connection with the acknowledged talent of the Faculty of the Baltimore College, gives an undeniable answer to the oft repeated question "Which is the best College?" We hope that the names of the Faculty of the Philadelphia College will not be again found appended to any one sided, imperfectly investigated, and apparently prejudged affair as the late report on Crystal Gold.

OPERATIVE DEPARTMENT.

	Baltimore.	*Penn'a*
Extractions	2430	723
Fillings	965	562
do. over nerves	9	84
do. to the end of Fang	8	
Removal of superficial caries	98	2
Salivary calculus, cases	35	27
Diseased Gums	30	
Irregularity of Teeth	3	
Diseased Antrum	1	
Fungus Tumor	1	
Total number of operations, Baltimore College,	3580	1398
do. do. Pennsylvania Col,	1398	
Balance of operations in favor of Baltimore College,	2182	

MECHANICAL DEPARTMENT.

Full Upper sets of Teeth	28	3
do. Lower do.	14	3
Pivot Teeth	15	7
Partial Upper Sets	18	16
do. Lower do.	1	
Total No. of mechanical operations performed in Balt. Col.	76	29
do. do. do. Penn. do.	29	
Balance in favor of the Baltimore College,	47	
Total No. of Teeth used in Baltimore College		736
do. do. do. Pennsylvania College		163
Balance in favor of the Baltimore College,		573

CROWELL.

DENTAL JOURNALS.

The American Journal of Dental Science for July, (in exchange,) is received. The Journal is, as usual, replete with articles valuable and interesting to the practitioner of Dentistry, especially do we call attention to Article IV, by Prof. P. H. Austen. We do not yield to any one in or out of the Profession, one grain more of admiration for the writings of those gentlemen who have and are diving into the heretofore hidden depths of Dental Science, but simply contend for a few more practical articles adapted for the every day requirements of the young and inexperienced members of the profession, who are unable to avail themselves of a Dental Collegiate education.

The July number of the *Dental Register of the West*, (in exchange,) is received. It always affords us pleasure to receive and peruse this valuable Practical Journal. This pleasure was somewhat alloyed on reading Prof. Taylor's valedictory, and consequent retirement from the editorial chair. We hope (yet doubt) that Dr. Taylor will be enabled in the sphere he has chosen to accomplish as much good as he has and could through the pages of the Dental Register. The reading portion of the profession, of the United States, and especially of the West, owe this gentleman some token of acknowledgment for his valuable services in their behalf; when they are prepared to pay it we hope to be counted in. Dr. Taylor, introducing the new but not unknown editors, says: "Drs. TAFT & WATT are both favorably known to the profession; they enter upon the editorial duties of the Register, with the determination to leave no stone unturned by which it may be made just such a work as the fast increasing growth of the profession in this great valley demands. We cheerfully commend them to the profession, and bespeak for them all that assistance from the liberal of the profession which so important an enterprise should receive."

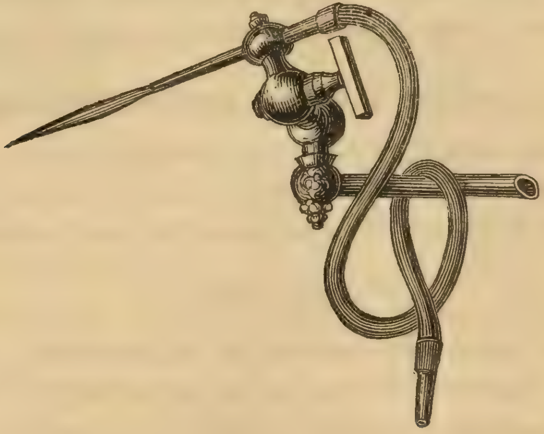
The *Dental Recorder* for August, (in exchange,) is also received. This periodical comes to us filled with matter interesting to the Dentist. This Journal being issued monthly is a valuable vehicle for the quick promulgation of new and important improvements and discoveries. We are indebted to its editor for calling the attention of the profession to the attack by the "News Letter" on two of the Actuaries of the New York Teeth Manufacturing Company.

The *Dental Obturator* for June, (in exchange,) was handed to us by its editor, together with the first volume, neatly bound, for which we return &c. &c. &c. We regret that the June number of this piquant journal was not received previous to the departure of our senior actuary, Dr. Solyman Brown, affording him an opportunity to reply in this number of the Forcep to the high flights of Odturator Chips, No. 4, on Dr. B's valedictory address.

Dental News Letter.—It is almost unnecessary to say that the letter, or puff, purporting to have been written by Jno. M. Crowell, and commented on in the April number of the News Letter, is a forgery. When we take into consideration the grossness of this forgery, the News Letter's knowledge of the total want of moral character of the author of the pamphlet that contains it, and their opportunities of ascertaining its paternity, we are sure all candid minds will bear us out in ascerting the editor of the News Letter has tarnished his reputation as a truthful journalist, and was over willing to indulge in, what he supposed, a hit against a successful rival in business. If, on the other hand, the News Letter was aware of the forgery, (which we do not for a moment doubt,) being creditably informed that the author of the pamphlet and the editor of the News Letter had an interview in their Philadelphia depot, a short time prior to the appearance of this article, he has but increased (if it were possible) the contempt we have long felt for all he has said or may say in reference to this Company, or its Actuaries. The editor of the News Letter is welcome to embrace either horn of the dilema in which he has placed himself, both he cannot avoid

CROWELL.

MACOMBER'S GAS BLOW PIPE.—Price $3 50.



HARD RUBBER.—We have made teeth expressly for the Hard Rubber and are now prepared to make sets of teeth on this principle, for all who may desire to give it a trial.

N. Y. TEETH MANF'G CO'S TEETH.

We have selected the following letter from many of like character in our possession.

"CAZENOVIA, Sept. 8, 1856.

"*New York Teeth Manufacturing Co.*

"Gentlemen.—I improve this opportunity to express to you in a few words, my gratitude for the unprecedented improvement which you have made in the manufacture of artificial teeth. Your teeth in forms, shades, and indeed in every respect, when put up in full sets so completely imitate nature, as to make nothing further desirable in this direction.

"And for partial sets, (it appears as if you must have had all nature Dagauerreotyped in the forms and shades of the natural organs on your moulds,) so perfectly are your various shades made to match the natural teeth, we are hardly able, after fitting them by their side, to distinguish their connection without removing them.

"Gentlemen, go on! and should you see any opportunity for improvement, make it, and the toothless, together with the profession, will richly reward and honor your untiring efforts. Yours respectfully.

"J. W. T. RICE."

DENTIST'S APPLIANCE.

We have received from George G. Brewster, M. D., D. D. S., a supply of the above, for allaying the sensibility of dentine. The number of credentials in its favor that we have seen, leads us to believe it is a good article. The maker says "it is non corrosive, anti septic, anodynal,—producing paralysis limited to the organ of sensation in a tooth. Price 75 c.

BARBED NERVE EXTRACTORS.

We have been shown by Dr. J. S. Clark his method of preparing this instrument. We will furnish samples of them to the profession gratis, or furnish them at $1,00 per doz., barbed, or 25 cents per doz., plain.

DR. BEALE.

In March last about fifty members of the profession assembled at the house of Dr. Augustus Brown, in Gt. Jones Street, New York, to congratulate Dr. Beale upon having received all the reparation the Governor of Pennsylvania could give him. We were still further gratified to notice upon this gentleman rising to speak at the late meeting of the Dental Convention, he was greeted with long continued applause.

SECOND ANNUAL MEETING OF THE AMERICAN DENTAL CONVENTION.

REPORTED FOR THE SOCIETY, BY WM. HENRY BURR.

The Association of Dentists organized in August, 1855, under the name of the American Dental Convention, held its Second Annual Meeting at Hope Chapel, New York City, on Wednesday, Thursday, and Friday, August 6th, 7th, and 8th, 1856. The following is a complete list of members present, as furnished by the Secretary:

LIST OF MEMBERS.

MAINE.

S. V. Howard, Skowhegan.

NEW HAMPSHIRE.

D. A. Stackpole, Dover.
L. W. Hale, Oxford.
A. J. Young, Dover.

MASSACHUSETTS

E. G. Tucker, Boston.
Dr. Wilson, "
D. Tracy, Worcester.
S. P. Miller, do
Thomas Palmer, Fitchburg.
C. A. Whitney, do
Jas. D. Brown, do
Geo. L. Cook, Milford.
M. Loomis, Cambridgeport.
F. Searle, Springfield.
Francis Field, Waltham.

CONNECTICUT.

W. J. Rider, Danbury.
Samuel Mallett, New Haven.
J. B. Wheat, do
Charles Merritt, Bridgeport.
James S. Barbour, Norwalk.
C. M. Hooker, Litchfield.
Lewis Betts, New London.
W. Potter, Norwich.
H. V. Porter, Naugatuck.
B. St John, Wilton.
R. S. Reynolds, Waterbury.

RHODE ISLAND.

W. H. Smith, Newport.
H. H. Farnham, Westerly.
F. N. Seabury, Providence.
W. H. Helm, do

J. H. Githens, Philadelphia,
J. M. Barstow, do
Spencer Roberts, do
Elisha Townsend, do
Daniel Neall, do
J. H. McQuillen, do
C. N. Pierce, do
J. W. McCurdy, do
S. S. White, do
J. F. B. Flagg, do
J. F. Flagg, do
David Roberts, do
Stephen T. Beale, do
Robert Arthur, do
C. A. Du Bouchet, do
J. Lukins, do
R. W. Robinson, do
William Gorges, do
S. G. Martin, Meadville.
Dr. Chandler, Rochester.
Jesse C. Green, West Chester.
J. Vallercamp, Lelms Grove.
W. A. Chittenden, Scranton.
J. Martin, Strasburg.
J. D. Wingate, Bellefont.
J. McCalla, Lancaster.
F. M. Dixon, Pottsville.

NEW JERSEY

C. A. Kingsbury, Mt. Holly.
G. C. Brown, do
J. E. Phillips, Burlington.
J. C. Robins, Jersey City.
B. F. Smith, Orange.
W. W. Ward, Newark.
A. G. P. Colburn, Newark.
Albert Westlake, do
W. G. Lord, do
John Hassell, do
Chas. B. Thurston, do
B. W. Franklin, do
William Mead, do
G. F. J. Colburn, do
G. Whitaker, Bridgeton.
John Lum, Patterson,

DELAWARE.

Henry Garrett, Wilmington.

MARYLAND.

C. A. Harris, Baltimore.
—— Blandy, do
P. H. Austen, do
H. H. Harvey, Hagerstown.

DIST. OF COLUMBIA.

J. B. Gibbs,
O. A. Daily
O. Munson,
C. H. Van Patten.

VIRGINIA.

John G. Coates, Roanoke.

GEORGIA.

George Roberts, Talbotson.
Albert Wilcox, Savannah.

MISSISSIPPI.

H. C. Kendrick, Natchez.

LOUISIANA.

J. S. Clark, New Orleans.

MISSOURI.

Josiah Forbes, St. Louis.
McKillops, do
G. H. Perine, do
Aaron Blake, do

NEW YORK CITY.

John B. Rich,
J. H. Foster,
E. J. Dunning,
Geo. E. Hawes,
F. H. Clarke,
William Dalrymple,
William H. Dwinell,
C. W. Ballard,
B. F. Maguire,
J. G. Ambler,
Norman W. Kingsley,
T. B. Gunning,
Geo. Clay,
S. W. Judson,
B. C. Lefler,
W. A. Bronson,
John Allen,
William T. Laroche,
A. L. Roberts,
J. T. Valentine
W. B. Roberts,
C. E. Francis,
S. A. Main,
Geo. H. White,
John M. Crowell,
C. S. Miles,
F. H. Burras,
David J. Steinburg,
W. T. W. Chapman,
A. Starr,
J. H. W. Vere,
A. J. Letamendi,
A. P. Preterre,
L. Berhard,
Max Sahel,
Samuel Hessel,
E. C. Rushmore,
E. S. Waters,
James T. Stratton,
Benjamin Lord,
John D. Chevalier,
William Michaelis,
A. C. Castle,
Charles D. Brown,
Eugene P. Preterre,
Robert B. Sutton.

NEW YORK STATE.

John Branque, Brooklyn.
S. C. Frink, do
Jonas W. Smith, do
C. A. Marvin, do
J. J. Dumon, do
F. W. Dolbear, do
B. S. Lyman, do
R. McGregor, Rochester.
A. Hooper, Binghampton.
L. D. Walter, Lockport.
S. T. Barret, Port Jervis.
Charles Merry, Herkimer Co.
A. Blakesly, Utica.
John C. Austin, Albany.
C. S. Weeks, Bedford.
S. B. Palmer, Tully.
E. H. Sylvestre, Lyons.
David Peabody, Elmira.
R. Walker, Owego.
A. Blake, Aurora.
G. N. Foster, Utica.
Daniel Smith, Hempstead.
L. W. Rodgers, Utica.
D. W. Perkins, Rome.
Stephen Mapes, Fishkill Land.
N. P. White, Yonkers.
H. K. White, Utica.
E. D. Fuller, Peekskill.
D. C. Estes, Albany.
T. H. Bradish, Utica.
C. B. Foster, Utica.

PENNSYLVANIA.

H. Townsend, Philadelphia.
T. L. Buckingham, do
A. Merritt Assay, do
Jas. E. Garretson, do

ILLINOIS.

T. P. Abell, Chicago.
W. W. Allport, do
S. P. Noble, Peora.

MICHIGAN.

M. S. Dean, Marshall.

INDIANA.

Wm. F. Morrill, New Albany.

OHIO.

Charles Bonsall, Cincinnati.
James Taylor, do
Geo. Watt, do
William M. Hunter, do
Henry B. Young, Zanesville.
Jonathan Taft, Xenia.

CUBA, W. I.

Elizco Vedder, Matanzas.
W. L. Tinker, Havana.

Dr. John B. Rich, of New York City, President of the Convention, called the meeting to order at 11 o'clock.

Dr. Charles Bonsall, of Cincinnati, the Secretary, read the minutes of the last meeting at Philadelphia, by which it appeared that eighty-two gentlemen of the profession were there enrolled as members last year.

Dr. Daniel Neall, of Philadelphia, offered the following resolution :

Resolved, That all practicing members of the Dental profession who may be present, and feel desirous of co-operating with us, be considered as, and hereby are, active members of this Convention, and are requested to sign the articles of association at their convenience.

The Chair ruled the resolution out of order, and cited the 3d and 4th articles of the Constitution to sustain his decision, as follows:

Art. 3. The Convention shall consist of members of this Convention who shall sign these articles of association, and of such other practitioners of dentistry and auxiliary branches of science as shall hereafter be elected to membership, and in like manner sign these articles.

Art. 4. Candidates for Membership shall be nominated by a member of this Convention at any of its meetings, and every such candidate as shall receive a majority of votes cast upon the question of his admission, shall be declared duly elected.

Dr. J. H. McQuillen, of Philadelphia, moved that the above articles be suspended.

Dr. W. H. Dwinelle, of New York, was in favor of the suspension of these articles. He desired the Convention to be an open one, and the platform they should lay down a broad and democratic one, with as little machinery as possible to carry out the ends they had in view. According to the spirit of the articles which they were called upon to suspend, it was necessary that they should go through considerable ceremony, which would greatly retard the business before them. He desired to give their friends who were strictly members of this Convention the right hand of fellowship at once, in order that they might feel entirely at ease. He trusted, therefore, that the motion to suspend these articles would prevail.

The vote was then taken, and the two articles were accordingly suspended.

Dr. Neall now renewed his resolution. He wished to make the organization the simplest possible, that could keep a body of men together.

Dr. Elisha Townsend, of Philadelphia, moved to amend by substituting "at liberty" for "requested."

The amendment and resolution as amended were adopted.

Dr. J. M. Crowell, of New York, inquired if gentlemen engaged in auxiliary branches of the profession were now to be considered as taking part with the Convention.

The Chair ruled that they were not—none but practicing dentists.

Dr. C. W. Ballard, of New York, moved the following resolution:

Resolved, That the gentlemen who have been practicing dentits, and who may be now engaged in the auxiliary branches, be admitted upon the same footing as dentists, or any person the Convention may nominate be admitted as members.

Dr. E. Townsend, of Philadelphia, wished the mover of the resolution to explain what he meant by auxiliary branches. He granted that this Convention, as a body, might receive a great deal of light and knowledge from all the collateral branches of science, which might be called so far auxiliary branches to their profession; but the question of admitting members of all the auxiliary branches to a vote in this Convention was quite another matter.

Dr. BALLARD in reply said that he meant precisely that class of persons who were admitted to a seat in the Convention at Philadelphia last year.

Dr. MCQUILLEN stated that a prominent editor of a magazine and another person who had been a practicing dentist were elected members last year, while Mr. Abby, a manufacturer of gold foil, was rejected.

Dr. BALLARD said that Mr. Abby was ruled out, and as regards the other gentlemen, his impression was that they signed the Constitution without being voted for.

Dr. L. W. ROGERS, of Utica, thought that the passage of the resolution would be opening the doors of this Convention rather too wide. The words "auxiliary branches" might include all persons who had ever made anything that was used in the practice of dentistry. If there were persons engaged in making teeth, or editing dental journals, who desired to be admitted as members of the Convention, their names could be presented singly to the convention, and the question of their admission then be acted upon. They ought not to adopt a general rule in reference to this matter, for they would then likely be overrun by all kinds of mechanics claiming to occupy seats in the Convention.

Dr. J. S. CLARK, of New Orleans, stated that the gentlemen alluded to by Dr. McQuillen as having been elected members at Philadelphia, were Drs. McCurdy and White, who came in as dentists; the resolution to admit Mr. Abby was withdrawn.

Dr. BONSALL believed that every member admitted last year was a practicing dentist.

After various amendments offered and suggested, the resolution was shaped so as to admit gentlemen who have been practicing dentists, but are now engaged in auxiliary branches, or any persons that may be nominated and elected as members.

Dr. L. W. ROGERS, of Utica, moved that the resolution be laid on the table. Agreed to.

Dr. S. S. White, of Philadelphia, did not like to lie under the suspicion that himself and partner came into the Convention by permission. When his name was proposed he said he was not a practicing dentist, but, nevertheless, he was elected.

The Chair ruled that while none but practicing dentists had a right, by the resolution, to take part in the Convention, those who had already signed the Constitution were not excluded.

Dr. Neall appealed from the decision of the Chair, and the question being taken on appeal the Chair was sustained in ruling out of the Convention "practitioners of auxiliary branches of science" mentioned in one of the suspended articles of the Constitution.

Dr. F. Searle, of Springfield, Mass, moved to restore the suspened articles 3 and 4.

Dr. Dwinelle, of N. Y., said that the words "practical" and "practicing" sounded very much alike, but they were very different. If they adopted the word "practicing" in their admission of persons to seats as members of this Convention, they would exclude very good dentists, who were temporarily out of practice. The resolution ruled them out because they would not be "practicing" dentists, although they might be "practical" dentists. He wanted a greater latitude in this respect than was now allowed by the resolution.

Dr. Clark, of N. O., stated that, as chairman of the committee that had this matter under advisement, he would explain that the object of the provision in the Constitution was to obtain the assistance of men engaged in collateral sciences, such as chemists, and members of the medical profession.

After some further discussion, the motion to restore was laid on the table, with the understanding that persons who were not practicing dentists should be nominated and voted upon for membership. The following gentlemen were accordingly elected *viva voce :* C. S. Miles, Solymon Brown, J. D. Chevalier, and Robert B. Sutton, all of New York. The admission of Mr. Chevalier was opposed, he being a dental instrument manufacturer, but he was elected by a vote of 17 to 14 on a division.

Dr. John Branique, of Brooklyn, moved to admit John Kiersing, manufacturer of gold foil and teeth.

The motion was opposed by several members and the candidate rejected.

The CHAIR appointed the following committee to report the order of business for the Convention:

Drs. Clark, La.; Kendrick, Miss.; Howard, Me.; Miller, Mass.; Helm, R. I.; Potter, Conn.; Clark, N. Y.; Robins, N. J.; Young, N. H.; Buckingham, Pa.; Garretts, Del,; Harvey, Md.; E. Henry, Ga.; McKellops, Mo.; Allport, Ill.; Taylor, O.; Gibbs, D. C.; Deane, Mich.

Dr. MCQUILLEN, of Philadelphia, Corresponding Secretary, being called upon for his report, stated that 2,800 circulars had been printed and sent off to different parts of the Union. He had received various letters but none of sufficient importance to present. Report accepted.

Dr. BONSALL, Recording Secretary and Treasurer, made the following report:

Amount paid for book and stationery,	$ 1	10
One hundred copies of *Daily Sun*, (Phila.)	1	00
Advertising,	1	00
Use of hall,	9	00
Services of janitor,	2	00
Circulars,	63	85
Bills paid by Dr. Rich for cards, canvass, sign, etc.	10	00
	$87	95
Amount received,	72	00
Balance due,	$15	95

Report accepted.

Dr. CLARK, from the Business Committee, made the following as a partial report of the order of business:

After an address by the President, 1st. Election of officers; 2d. The pathological condition of diseased dentine, and its treatment; 3d. Best preparation of gold for filling.

The President remarked that, by the articles of association, it was made his duty to address the Convention upon such subjects as he might deem useful and important for their consideration. This duty he would respectfully decline, as the Convention was composed of those whose collective wisdom it would be presumption in any individual to advise. He took occasion, however, to report certain expenses which he had incurred in behalf of the Convention for the use of the room, and for a full report of the proceedings. The cost of the room would be $12, and $2 for janitor. The cost of a report of the proceedings, supposing it should not exceed a certain amount of matter, would be $50.

On motion, the report of the Chair was received and adopted.

The next business in order being the election of officers

Dr. F. H. Clark, of New York, moved that the officers nominated be elected by ballot, and that if no majority was obtained on the first ballot, then the three highest be put in nomination, and that a plurality should elect on the second. Carried, and Drs. Taylor, of Ohio, and Dalrymple, of New York, were appointed tellers.

The following officers were, after balloting, declared elected:

President—Chapin A. Harris, of Baltimore.

Vice-President—Daniel Neall, of Philadelphia.

Recording Secretary—Elisha Townsend, of Philadelphia.

Corresponding Secretary—W. W. Allport, of Chicago.

On the ballot for President, Dr. Harris received 47 votes; Dr. Neall, 19, and Dr. Rich, 15; scattering, 22. The two latter candidates having declined, Dr. Harris was, on motion, declared unanimously elected.

On the ballot for Vice-President, Dr. Neall received 31 votes; Dr. Dwinelle, 21; Drs. Blakeslee, Taft and Crowell, 6 each; scattering, 14. The three lowest candidates having withdrawn, a formal ballot was taken upon the two highest, when Dr. Neall received 53 votes, and Dr. Dwinelle, 17. The election of Dr. Neall was then, on motion, declared unanimous.

The resolution of Dr. Clark, of New York, was, on motion of Dr. Kendrick, of Natchez, suspended for the election of the secretaries, and all the candidates nominated having declined, except the gentleman named above, they were elected *viva voce.*

The Chair appointed Dr. Clark, of New Orleans, and Dr. Townsend, of Philadelphia, a committee to escort the President elect to the chair.

On motion, the Convention took a recess till 4 o'clock.

AFTERNOON SESSION.

The Convention having been called to order, the President elect was escorted to the chair by the committee appointed for that purpose.

Dr. Rich in retiring from the chair, returned his thanks to the Convention for their uniform kindness and support toward him in the discharge of his duties. It was a source of great gratification to him to find that he had always been supported and sustained during his term of office. (Applause.)

Dr. Townsend, of Philadelphia, introduced the President elect as the pioneer of Collegiate Dental Education, not only in this country but throughout the world, and as one of the first who advocated dental association. He felt proud to see him take his place at the head of this democratic convention of dentists. (Applause.) His generosity and good nature were known to every one of them, and his heart, like his body, was large enough to take them all in. (Laughter.)

The President scarcely knew how to thank them for the honor conferred; it was the more gratifying because unsought. He promised to use his best efforts in the discharge of the duties that devolved upon him in a faithful and impartial manner, but having had little experience in presiding over deliberative bodies, he begged their kind indulgence and assistance. (Applause.)

On motion of Dr. Ballard, a vote of thanks was unanimously tendered to Dr. Rich, the retiring President, for the very able manner in which he had discharged his duties.

Dr. Rich thanked them for their appreciation of his efforts.

Dr. Clark, of New Orleans, was instructed by the committee on business, to report the following resolution:—

Resolved, That in the discussions each member be limited to — minutes.

Motions were severally made to fill the blank with 15, 10 and 5 minutes. The 10 minutes rule prevailed, and

The Convention then took up as the next business in order the subject of the

PATHOLOGICAL CONDITION OF DISEASED DENTINE AND ITS TREATMENT.

Some hesitation being shown by members about leading off in the discussion, Dr. Clark, of New Orleans, suggested that Dr. Geo. Watt, of Cincinnati, read a paper on the subject.

Dr. Watt preferred, as his paper related to remedies, that the pathological condition should be first discussed.

Dr. James Taylor, of Cincinnati, by particular request, opened the discussion. He considered this as decidedly one of the most important subjects that could be brought before this body. A great deal had been written upon it, but when they came to compare it with their own observations, they found that a great deal had been left unsaid. All disease to be correctly treated, should be perfectly understood; when they could get at the cause of the disease, they were, to a certain extent, prepared to go to work and apply the appropriate remedy. Every individual who had practiced the profession, must have noticed that all the conditions of decay were not of a similar character, but presented very different modifications. They often had to deal with excessive sensibility, and generally in connection with that, there was a peculiar physical condition of the disease going on. There were many who did not stop to inquire into the causes producing this certain condition of disease. They could not take it for granted, for instance, that they had the same causes of disease in the sensitive condition of the dentine as they had in cases where there was no sensibility at all. To treat properly these cases, they must necessarily inquire what were the causes producing this difference. He took it for granted that in a healthy condition of the dentine there was a circulation kept up through the dentine itself, and there was not therefore, an excessive sensibility. All the changes which took place then, in this condition of dentine, he regarded as a pathological condition, departing from health. There were three, four or five different kinds of decay; he would speak of three of the most prominent. In the first place, there was the black decay, which had very little sensibility. In this there was a mere deadening of the dentine, a breaking up of the circulation, and a destruction of the vitality, ordinarily without much disentegration of the parts. In the second place, there was the brown decay, in which there was a disentegration of the parts, the living or earthy portion in most cases being entirely destroyed, leaving the cartilagenous portion in a soft state. Then, there was a third variety, called the white decay, in which more of the cartilagenous portion of the tooth was destroyed than of the earthy part. These three different kinds of decay were certainly caused by different agents, and required very different treatment. In the first, there was very little sensibility, in the second, sometimes a great deal, and in the third, always an excess, unless the case was modified by certain conditions of the secretions of the mouth. The chemical agent which acted upon the cartilagenous parts was certainly different from that which acted upon the living parts. By immersing bone in muriatic acid nearly all the lime would be removed, showing conclusively that a different chemical agent caused the brown decay from that which caused the white. Hence the importance of understanding this subject in order to get at the proper treatment. Even after the best surgery, the organs were liable to further progress of the disease.

Dr. Townsend, of Philadelphia, said that he was here to obtain instruction upon the subject, and therefore, he did not feel authorized in saying a great deal upon the question now under consideration. He had noticed the same conditions of dentine of which the preceding speaker had made mention. He had felt, as doubtless they had all, more or less felt, that when they removed the carious portion of the tooth, they had not done all that he hoped some day to see their profession doing for the patients who should come under their hands. If they did nothing but remove the portions of the tooth which were decayed, and render it mechanically and artificially sound, so far, perhaps, as that particular spot was concerned, they had done their duty; but certainly, they had not made their art a scientific one, unless they looked farther than this, and unless they looked to the prevention in other parts of the mouth of the same effects resulting from the causes which produced the effect in this particular spot which they had carpentered. It was necessary that they should know something more of the pathological condition of the dentine than a great many of them did know. Perhaps they were all deficient in this kind of knowledge, and a good many of them perhaps had been satisfied with merely the routine practice of cleaning out cavities in the teeth, as if their whole duty to their patients and the dental profession was thereby fulfilled. It reminded him of a remark made by a gentleman to him when he commenced his profession. "So," said he, "I find you have got to be a mouth carpenter."

Very early in his practice he had ascertained these conditions. He found in some cases that this exciting sensibility was almost unbearable, and that the sensibility was, like that of all the other nerves, greatest at the extremities, closest to the enamel or between the enamel and the dentine, and that frequently when he cut in below the sensibility was entirely gone. This sensibility he attributed to inflammation of the dentine, analogous to that produced by a wound in any other part of the body. Accordingly he suggested to an anatomist of considerable skill whether there might not be a circulation in the dentine out entirely to the borders of the enamel, and whether there were not fibrous nerves passing through the whole body of the dentine which caused extreme tenderness in some cases from inflammation. His friend laughed at him, and said that there were no nerves there to become inflamed. He, however, ascertained that in excavating a deep cavity that ran into the medullary membrane the sensibility at the extremities was entirely gone. This proved to him by deduction that the tenderness existed in the branches of nerves that could not be discovered except by a powerful microscope. He had since had the pleasure of seeing these branches of the nerves by means of a microscope, extending out to the enamel, and some instances actually penetrating half way through it, proving his hypothesis correct by actual observation.

He had not found, he was sorry to say, how to correct these diseased conditions. That was a great thing to be discovered and would, if discovered, be what many of them now considered one of the ultimatums of their labors.

Dr. Dwinelle, of New York, indorsed the theory of Dr. Townsend. The dentine was ramified by tubuli which lay at right angles with the nerve, as he had seen through a microscope. He had some specimens which he would be happy to show to any member at his office. The tubuli were 1.6,000 or degree. The exact nature of inflammation of the dentine they all would admit that they did not understand, although the subject was much better understood now than a few years ago. There was much for them yet to learn in regard to the pathological condition of the teeth. It was impossible to ignore this condition, and operate with success upon the decay of the teeth. This condition was modified by various circumstances, by the characteristics of the teeth, by the constitution of the person, and by the action of the agent producing the decay. In many cases the sensibility was only at the point of union with the enamel; sometimes it extended at a particular point within the cavity; sometimes the entire dentine of the crown of the tooth was inflamed, and sometimes it was to be found only within the lamina outside of the cavity. It would be nonsense to apply the same remedy to all these cases. If the inflammation was not stopped the undecayed, as well as the decayed teeth, would partake of the sensibility. There were cases where it was impossible to reduce the sensibility without constitutional change or treatment, and common sense suggested that that treatment should be different.

Dr. McQuillen, of Philadelphia, had always questioned applying the term inflammation to that condition; he thought inflammation impossible. Was it possible that tubuli 1-10,000th of an inch in diameter could become the seat of inflammation? The existence of blood-vessels in the dentine he considered a work of supererogation. Could not the circulation go on without the use of blood-vessels? Did we not find a circulation of sap in the vegetable economy, where the vessels absorbed it like a sponge? He conceived that the circulation in the dentine was analagous to that, and if there were no blood-vessels how could there be inflammation? Heat, swelling, tenderness and redness, were described as conditions of inflammation. It was said by some that they had discovered blood in the dentine. If so it was due, in his opinion, to a rupture of adjacent blood-vessels forcing the blood into the tubuli and producing discoloration. The tenderness of the dentine was discovered only when touched by the instrument; in inflammation, pressure upon the part only increased the pain that was already there. It seemed to him, 1.7,000 of an inch in diameter, and were subdivided so as to form little canals or caniculi. What fluid charged these tubuli was matter of hypothesis; it was probably more subtle than the ordinary gross fluids of the body, something like the electric or neuratic fluid. The most sensitive part of the nervous system was the surface; a scald or burn produced a hundred fold more pain than the severing of a nerve. That seemed to be a law of the animal economy, and it held good in reference to the teeth, the most sensitive part of the teeth being the outer surface of the dentine covered by the enamel, and the most sensitive point of the most sensitive part was where the dentine formed an acute angle with the enamel at the furthest surface. Dr. Maynard, of Washington, several years ago suggested the propriety of severing the tubuli at the lowest point, for the purpose of destroying the sensitiveness. The idea was a phylosophical one—to cut them off at the base.

The remarks of Dr. Taylor were correct concerning dental caries. With regard to remedies, he had found the best one to be a solution of chloroform and chloride of zinc, and before the Convention adjourned he hoped to have the privilege of reporting a case of the excision of the superior maxillary in which he used the solution with most happy results.

Dr. D. A. STACKPOLE, of New Hampshire, had examined the tubuli through a microscope, but he was not satisfied that any fluid existed in them. They were there for a wise purpose undoubtedly, but what that purpose was, he conceived was not yet ascertained. He found in his practice that in some instances the nerve extended not only through the dentine, but through the enamel. In some cases they would find that, by rubbing an instrument or the finger nail even upon the enamel, there would be extreme sensibility manifested. A patient, under these circumstances, frequently would ask to have the cavity of the tooth filled, when, in reality, there was no necessity for it. He trusted that this matter would be fairly discussed.

Dr. JONATHAN TAFT, of Xenia, Ohio, said that the condition of the diseased dentine which the dentist most frequently met was an inflamed and sensitive one. This condition was attended with various circumstances, and was various in its character and therefore, that it was incorrect to call this sensibility, inflammation, and that it was more reasonable to suppose that the pain is induced by impressions made upon the delicate nervous filaments that are in the tubuli. He believed with his friend, Dr. Neall, that the most efficacious remedy was a sharp instrument.

The PRESIDENT, at the suggestion of Dr. Rich, made a few remarks upon the subject. He had but a single thought that he wished to bring forward at this time, having heretofore in other places said a good deal upon it. Between the dentine and the enamel was a membrane which was termed by Rashkow the preformative membrane ; others had termed it the true or persistent membrane of the pulp of the tooth. In his opinion, that membrane performed one more important part than was generally supposed—a different function from any that had ever been ascribed to it. Accident had revealed to him that function. But he would ask to be excused from giving his views upon that subject now, as he was very desirous to meet his family this evening just out of the city, from whom he had been separated for several weeks. He would return to-morrow morning, and would then take great pleasure in stating the result of his discovery.

Dr. NEALL, (Vice President,) accordingly took the chair. He conceived that the dentist ought to know everything of the physiological as well as the pathological conditions of the dentine. He sometimes found it impossible to fill the soundest tooth without making the patient vibrate like a fiddle-string.

Dr. SMITH, of Connecticut, considered all theories and speculation on this subject as of little practical benefit. It was very evident that exalted sensibility was a disease ; would any gentleman show us a sure remedy ? Some had tried this and some the other thing. He had adopted a very simple remedy. He had been led to believe that the sensibility was communicated through the medium of the gums, because he found that by cutting away the gums a little, he could excavate without pain. He was not sure whether it was imagination, or whether it was that the cutting of the gums caused so much more pain, that the patient was enabled to submit to the operation so well. He had tried chloroform and chloride of zinc in numerous instances and had produced satisfactory results in, perhaps, one case out of seven. With chloroform alone he removed the sensibility for the moment so as to cut away the decay without pain. With chloride of zinc alone he thought he had sometimes received benefit.

Dr. Starwin, of Norwalk, Conn., had tried all the various remedies, but found them uncertain; and the only thing he could rely upon was a sharp excavator, and to excavate close to the enamel. He had found one patient upon whose teeth it was impossible to operate; he was all nerve. Patients who had highly sensitive teeth had generally a disordered system, particularly the bowels. He had been in the habit of prescribing cathartics for such, and after getting the system regulated, he found he could operate with far less sensitiveness on their part. There were cases, however, where he could not remove the sensibility at all. In a case that he operated upon yesterday where the tooth was extremely sensitive, he had put ether into the cavity, and after half an hour excavated it and filled the tooth, with a considerable less degree of pain than the patient had suffered heretofore. He however considered it more the effect of the imagination than anything else. Excavation with a sharp instrument immediately between the enamel and the dentine was the best remedy in his judgment.

A Member asked Dr. S. how long it took to bring the system to the right state by the use of cathartics.

Dr. Starwin replied, from three days to three months.

Dr. Rich inquired if he left the cavity in the tooth open during the time he was treating the system in the cases where it took three months.

Dr. Starwin said he did.

Dr. S. V. Howard, of Me., had found that an application of pulverized spanish flies would, in some cases, destroy the sensibility in a very short time. He had found, what others probably had observed, that by cutting in a different direction with the excavator, he could get along with a sensitive patient pretty comfortably in nine cases out of ten.

Dr. F. M. Dixon, of Pottsville, Pa., said that his own experience, he must confess, had been the reverse of that of Dr. Starwin; he had found some of his most nervous and sensitive patients to be those who were the most healthy and whose digestive organs were in a good condition. In regard to this sensibility of the dentine, nature seemed to have been very irregular—more so than in any other part of the system; and the idea had occurred to him that if the nerves were to be found running in different directions in the dentine, some teeth might be less supplied with nerves than others, and some particular parts of the same teeth less supplied than others. And this idea seemed to be borne out by the fact that the dentine was found to be more dense in some parts than others.

The different kinds of decay had been alluded to by Dr. Taylor. He conceived that, perhaps, the cause of these different kinds of decay were attributable more to the condition or structure of the teeth themselves than to anything else. For instance, the white decay was found in very white, chalkly teeth, and seldom in teeth of dense structure, which were more commonly affected by black decay. He would merely throw out this suggestion to lead others to make their observations.

On motion of Dr. Bonsall, it was ordered that when the Convention adjourn it be to meet at 10 o'clock to-morrow.

The Convention then adjourned.

SECOND DAY.—MORNING SESSION.

The Convention assembled at 10 o'clock.

Dr. Clark, from the Business Committee, reported that they had assigned 12 o'clock M. for the reading of a paper, by Dr. Townsend of Philadelphia, on "Professional Fees."

Dr. Townsend, of Philadelphia, announced that a meeting of the American Society of Dental Surgeons was held at 9 o'clock, A. M., and that they refused to consider anything but the business laid over from last year, viz.: the expediency of dissolving the society; and the society voted unanimously in favor of the dissolution. The announcement was received with applause.

DISEASED DENTINE.

This subject being resumed,

Dr. Geo. Watt, of Cincinnati, by express desire of the Convention, read a paper on the subject of the "Action of Pathological Remedies on Inflamed Dentine." He stated that it was written for publication in the *Dental Register.*

Dr. Robert Arthur, of Philadelphia, said that the question now under consideration had been discussed by their profession over and over again. He had nothing particularly new to say upon the subject. He had listened with a great deal of pleasure to the reading of the paper just presented to the Convention. There was not only a mechanical, but a physiological point of view, in which this question was to be considered. He proposed to present very briefly his views in regard to this matter of inflamed dentine. The condition of dentine, termed sensitive, was not a healthy condition, and was a change from a normal condition. This fact was well established, that although the dentine of a perfectly healthy tooth had a certain degree of sensibility, it was increased when caries set in, and it was exposed to contact with the fluids of the mouth. This was illustrated by the fact that when a carious cavity was prepared for filling, which was slightly sensitive, it became still more so after a lapse of time. The term inflammation, as applied to this condition of the dentine had been objected to ; but there was such a vital change in the parts that it was impossible, with their present knowledge upon the subject, to apply any term which would more clearly express the exact condition. Inflammation, so far as they could at present define it, was a local effect produced by the action of agents capable of producing irritation of the parts, a change of the circulation and nervous sensibility. Inflammation was not always accompanied by pain. It might lead to a simple exaltation of sensibility or a nervous irritation of the parts. Their knowledge of the intimate relation of the teeth was very imperfect. It was impossible to state clearly how the vital changes, even in the more vital tissues where vessels could be traced, went on. Whether an increased circulation took place in this part or not, it was impossible in their present state of knowledge to ascertain. It was precisely the case with the dentine as it was with any other vital tissue, if it could be protected from the action of irritating agents the sensibility would pass away or be relieved. It was not always possible to do this. Sometimes the caries was exceedingly slight so that it was impossible to obtain a sufficient cavity in which to place any substance to protect it from the destructive agencies. Whenever it could be done, without danger of injury to the pulp, a temporary filling composed of a substance which would resist the action of the fluids of the mouth was sufficient, if the patient could take sufficient time for the parts to become restored to a healthy condition. That fact had been well established, and hence this was one of the most reliable methods of treating exalted sensibility. But in the great majority of cases it could not be done on account of the nearness of the pulp. In these cases escharotic substances, capable of destroying the vitality of the part, might be used with advantage and safety.

Of all the agents used for that purpose known in the profession, that which had been found the most reliable was arsenious acid. The great objection to the use of arsenic was its liability to absorption. Besides the chemical view of this subject, there was another view to be taken. In order that absorption might go on, vitality was necessary. This was evinced in cases of carious bone. Absorption did not take place in a portion of bone deprived of vitality; and this was precisely the case with devitalized dentine; when the superficial layer of the dentine was deprived of vitality by arsenic, it lost its powers of absorption. It was the fact, nevertheless, that in time the arsenious acid would pass through the devitalized dentine to the pulp, but that was simply by infiltration through the layers of the dentine. Such was his view of the matter.

The question then was, how could it be used with safety? Arsenious acid, in his opinion, might be applied with perfect safety, if the cavity of the decayed tooth was a superficial one, and if the arsenic was not allowed to remain too long. The most sensitive parts of the tooth to excavate were those lying nearest the edge of the cavity; and in many of these cases, it was sufficient to protect the thin line of dentine over the pulp by a layer of wax, and then apply the arsenic upon the superfices of the cavity. This was not a mere matter of opinion; an experience of some fifteen years justified him in saying that it was a safe and proper remedy if judiciously used. Much had been said against it because of the frequent injury arising from its injudicious use. Still where it could be avoided, of course it should be, and a few sharp cuts of the instrument would remove the difficulty.

Dr. WRIGHT, of Ohio, inquired if he used arsenious acid in combination with anything else?

Dr. ARTHUR said he used arsenious acid alone, and until a few years past he had always used it dry. His usual practice was to allow it to remain ten or twelve hours only to avoid any possible danger. In some cases the sensibility was not destroyed, but rather increased, by one application, in which case a further application was necessary. He had used arsenic in form of cobalt, which was less dangerous; that might remain twenty-four hours. He had never seen any instance of the destruction of the vitality of the tooth, even after the lapse of many years, where arsenious acid or cobalt had been used.

Dr. ROGERS, of Utica, asked if he put in anything to neutralize the acid?

Dr. ARTHUR said he usually did not, but in twenty-four hours he did not fear the penetration of it to any depth.

Dr. ALLPORT, of Chicago, inquired if he put in anything to neutralize the acid before he put in the temporary plug.

Dr. ARTHUR.—Nothing, whatever.

Dr. COLBURN, of Newark, New Jersey, said that with reference to the brown decay, which they all had no doubt found the most sensitive, had made use of mechanical pressure as the surest remedy. He had been more successful with it than with all the applications put together. He applied his finger covered by the napkin to the edge of the gum in contact with the decay and pressed with great force, after which he could excavate successfully in most cases. The decay could generally be removed in a continuous lump. There were some cases, however, in which he could not get at it. He did not conceive the sensitiveness to be conveyed through the tubuli, but through the periosteum. If the sensitiveness was conveyed by the nervous system through the tubuli, why would not the bottom of the cavity be as sensitive as the top? There seemed to be a sympathy between the edge of the gum at the junction of the enamel and the bony part, and the pressure of the finger nail would usually entirely destroy the sensitiveness. If the finger nail was pressed just below the gum in a healthy mouth, the same sensitiveness would be produced as existed in the case of this disease. He referred only to brown decay on the outer surface of the teeth.

Dr. BALLARD, of New York, thought the gentleman had a peculiar physiological theory of his own.

Dr. COLBURN said he offered the result of his own experience, and the members of the Convention might receive it as they thought fit.

Dr. ROGERS, of Utica, had used arsenic some twelve years ago to destroy pulp, and was induced to use it to destroy dentine where it was extremely sensitive. Previous to doing so he had no knowledge of its being used for that purpose. The operation was successful in destroying sensitiveness. He saw his first work done in this way some three years afterward, but was not quite satisfied with its appearance. He thought it appeared slightly discolored beneath. He had at first used it more as an experiment, but for the last three or four years he had used it with more confidence, and recently having had occasion to inspect some work done three or four years ago where it was used, he found it looking very well indeed.

Dr. RICH inquired if in the first case the discoloration appeared to be in the whole body, or immediately under the filling.

Dr. ROGERS replied that it appeared in the whole body of the tooth; but that was the only case he had discovered with such an appearance, and he was pretty well satisfied that he had not treated it as he ought to have done—that he had allowed the arsenic to remain too long.

Dr. KENDRICK, of Natchez, inquired if he used in that case dry arsenic or in solution?

Dr. ROGERS.—Dry.

Dr. RICH inquired of the gentleman from Newark, how he managed to get his finger-nail under the edges of the gum when the tooth was very small—if he had his nail sharpened into a point. It seemed to him a mechanical impossibility.

Dr. Colburn.—When it is a mechanical impossibility, I do not expect to do it. (Laughter.) He had generally, however, been able to accomplish it; if any gentleman had found it different he would like to hear it.

Dr. Searle, of Springfield, thought the secret of the effect produced of destroying sensibility was by producing another pain.

Dr. Colburn admitted that there might be something in that.

Dr. Ballard, of New York, had during the last four months a family of four young ladies under his care, whose teeth had been treated with arsenic. The dentine was extremely sensitive and the cavities were nearly all superficial. They had lost several teeth, and altogether they had some twenty-seven or twenty-eight teeth whose vitality had been entirely destroyed by the use of arsenic. One of them, he believed, had ten teeth discolored. In two or three instances the nerves had been exposed, but generally the decay was superficial. The teeth had been mostly operated upon two or three years ago with arsenic. He had great faith in sharp instruments, but he frequently used chloroform and chloride of zinc.

But there was a remedy which had not yet been referred to, though it could hardly be considered a point of practice; it was simply leaving nature herself to perform the cure. If the dentine was simply protected from foreign influences, and left to itself, it would entirely recover its tone. It was necessary in that case to prepare the cavity as carefully as possible, and put in a temporary covering of gutta percha or wax.

Dr. Arthur inquired if the dentist who had operated on the teeth of the four young ladies was a skilful one.

Dr. Ballard said he had a high reputation as an operator and his work was handsomely done. He had understood from them that the arsenic was put in one day and taken out the next.

Dr. Flagg, of Philadelphia, thought the last speaker rather too sweeping in his remarks against the use of arsenic. It was liable to accident, it was true; but every gentleman of the profession present knew that it could be used with safety in the hands of a judicious operator. They were much more liable to accidents with that agent, because it was much more active and powerful than any other agent. He would never allow it to remain in the cavity of the tooth longer than five hours at a time, for he considered if it remained longer than that time, it would penetrate the tooth so much as to produce material injury. Some years ago he removed the crowns of four incisor teeth, together with the two cuspididata, for the purpose of inserting artificial crowns. They were most of them very sensitive, and being belated in the operation instead of depending upon an instrument to probe the nerve cavities, the nerves being alive, he made an application of arsenious acid, directing his patient to take it out before she slept, to rinse the mouth, and then apply cotton to the cavites, and return to him in the morning to have the crowns placed upon the roots. He saw nothing of her for two weeks, when she told him that the roots had been so comfortable that she had no occasion to call. He found on removing the little pledget of cotton, that the periosteum of the roots were so far destroyed, that the roots came away in the attempt to remove the cotton. Everything was in a healthy condition previous to his applying the arsenic.

Dr. Taft, of Ohio, said that when a case of sensitive dentine was presented to them, they must consider the modyfying circumstances attending it. The same course of treatment could not be indicated, of course, in all cases. The treatment that would be indicated in the teeth of a young person might not be indicated in the case of an older person, although the same constitutional peculiarities might exist in both cases. When a case was presented to them, they must consider all the circumstances attending it—what were the constitution and age of the patient, the peculiarities of decay, the nature of the agent producing the decay, the amount of sensibility to be allayed, and whether it was of a chronic or acute character. These circumstances should all be considered before they went to work, in order to treat the cases in their hands rationally; and when they had ascertained all these circumstances, they could then indicate the treatment to be adopted. It was always desirable that the dentine should retain its vitality. To accomplish that, sometimes constitutional treatment was necessary; in other cases it was sufficient to shield the part from the action of exciting agents. He had found Hill's stopping as good as anything else for temporary filling; it was more easily applied than gutta percha, would not contract by cooling, and would remain longer in the cavity.

Again, it was sometimes necessary to destroy the sensibility or vitality of a particular part, and at the same time shield the other parts so as to preserve the life of the tooth. It was desirable that all the dentine left should retain its vitality. Some agents would produce the decomposition and death of a thin lamina of dentine without injury to the rest—such as nitrate of silver and chloride of zinc.

Again, it was sometimes required to destroy the vitality of the entire tooth, in which case, arsenious acid was the proper agent. Chloride of zinc acted only on that portion of the living tissue with which it came in contact, and in a very little while it became satiated and would act no further; and so with nitrate of silver, tannin and creosote, but not so with arsenic. Arsenic was absorbed by both the living and dead dentine by capillary attraction, and conveyed to the periosteum producing suppuration; hence the necessity of using it with great caution. In many cases, particularly in young persons, where the teeth were highly vascular, it would be improper to use it all. Some twelve years ago he had applied it to a very small cavity in a central incisor of a lady sixteen years of age. It was applied in the evening and in the morning it was removed, and the next day the tooth was excavated and filled. After three days it became slightly painful and appeared of a deep bluish cast, and on removing the filling and drilling into the cavity, he found the pulp dead. The arsenic had remained in the cavity fourteen or fifteen hours.

Being asked if it was not possible that the death of the tooth was caused by mechanical pressure, Dr. Taft replied that he was not aware of any pressure being applied; the teeth were separated sufficiently by nature.

Dr. Clark, of New Orleans, said the main question of interest to the profession was not, how they could save their patients from pain, but how they could preserve the life of the tooth. He was very well satisfied with the direct surgical treatment in all cases of superficial caries. But, to leave this question for a more interesting one. After excavating a deep-seated caries in a large molar or bi-cuspis tooth after a thorough examination of the diseased part by a microscope, he had often been unable to determine whether he ought to remove or treat in order to save the life of the tooth. Leaving aside all minor considerations of pain in excavating, could gentlemen tell him the pathological condition of the dentine when it presented a soft and sometimes discolored appearance, where great care was required to avoid reaching the pulp and ruining the tooth; and could they give him a treatment that would save the life of the tooth? He was very anxious for light upon this point. It had been a matter of serious investigation with him, and he had no doubt he had sacrificed many teeth where they might have been saved—some operating where he should not have done it, and some by postponing the operation.

DENTAL FEES.

According to appointment, Dr. TOWNSEND, of Philadelphia, read a paper on "Dental Fees," which was frequently applauded.

Dr. ROGERS offered a resolution, "That a vote of thanks be given to Dr. Townsend for his very able paper, and that it be published in pamphlet form, to circulate among the members at the expense of the Convention."

A MEMRER asked if the paper was the property of the Convention, Dr. Townsend, or Dr. Clark?

Dr. TOWNSEND believed he had the right of disposing of the paper, and he therefore gave it into the hands of the Convention to do with it as they pleased.

Dr. ROGERS would like that the paper should be published, and offered his resolution in an amended form, so as to order that a certain number of copies (which were left blank) should be published.

Dr. NEALL hoped it would be published, as proposed by other gentlemen, by putting their hands in their pockets.

Dr. TOWNSEND said that in order to defray all expenses, he hoped they would put their hands in their pockets, and stated that the assessment this year for the expenses of the Convention would be three dollars on each member present—that would cover the whole ground. A voice—"We'll do it."

Dr. ROGERS thought the assessment should be on all the members, and not only on those present.

Dr. AMBLER, of New York, hoped a committee would be appointed, not only on the publication of the address, but to endorse its principles. (Applause.) After some further discussion,

Dr. ROGERS read the resolution as amended as follows :

Resolved, That the thanks of the Convention be tendered to Dr. Townsend for his very able and interesting paper, and that a Committee be appointed to take the whole subject into consideration and to recommend such action as may be thought expedient, with reference to the address and the subject of it.

The resolution was carried, and Drs. Taylor, Ballard, and Clark, appointed such Committee. Dr. Rogers having requested to be excused.

A vote of thanks was then passed to Dr. Watt for the able and interesting paper read by him in the morning.

MEMBERSHIP.

On motion of Dr. BALLARD the following resolution was adopted :

Resolved, That this Convention shall consist of all practicing dentists who may desire to take part in its proceedings ; and that any clause in the constitution conflicting with this resolution be and hereby is repealed.

DISEASED DENTINE.

The Convention then resumed the subject of the "pathological condition of dentine and its remedial agents."

Dr. TAYLOR, of Cincinnati, considered that he had benefited by the discussion, and that he could congratulate himself that he had been profited by his journey from the West to attend this Convention. As regards the subject under discussion, he had felt the same difficulty that was suggested by Dr. Clark—he wanted information in regard to the treatment which would save the life of the teeth. For instance, there were teeth in which the decay had almost reached the nerve, so that many would suppose that the nerve was actually reached by it. It was important to know whether the nerve was really exposed before they attempted to operate. The mere fact that very cold water taken into the mouth produced pain, was not a diagnosis that the nerve was exposed, or was in a state requiring to be destroyed. He had repeatedly had patients come into his office, saying that such and such a dentist had refused to operate upon a cavity because the nerve was exposed. He took the ground that whenever by introducing the instrument around under the enamel, they could find sensibility, the nerve was not utterly exposed; there was always in that condition a lamina of bone protecting the pulp, which, if it could be saved by the application of any remedial agent, would preserve the vitality of the tooth. And here the question would present itself, is the dentine in such a state of inflammation as to require the dissolution of the parts, or is it in a state of exalted sensibility? The idea of the blood getting into the dentine was hardly to be entertained, but there certainly was increased circulation. Now he contended that increased circulation was necessary for the proper deposition of bony matter, for the ultimate protection of the pulp. Hence if any remedy could be applied to arrest the decomposition, the tooth might be saved.

The next thing to be considered was, what agents are indicated by which they might accomplish this result? And here he would say that the essay by Dr. Watt closely covered this ground. He had pointed out in that essay certain agents which formed insoluble compounds by which the progress of the disease might be checked until nature had an opportunity to restore the parts to a healthy condition. Upon those remedial agents he (Dr. T.) had predicated his treatment, and he had persevered week after week, and sometimes month after month, in order to preserve the life of the teeth. Great patience and perseverance was required in those cases. He regarded the consideration of these insoluble compounds as an important one. They should be such as not to destroy the dentine itself, and this was the reason why he used in all such cases, tannin and creosote, instead of a chlorine preparation.

In regard to this tender condition of the dentine, he had but one remark to make, and that was, that it would often be found that the patients did not properly control their diet during the treatment. He thought a great deal of difficulty in practice arose from patients not observing a proper diet, by refraining from vinegar and other acids.

Dr. C. A. Harris, of Baltimore, (Dr. Neall in the chair,) said, that the question before the Convention for discussion was, the pathological conditions of dentine, and their remedial indications. Only two of these conditions had as yet been noticed. The first was, that peculiar structural alteration, denominated caries, consisting, as is generally believed, in a chemical decomposition of the earthy salts, and partial or complete disorganization of the animal framework of the affected part. This was one of the pathological conditions that had been discussed. The other was exalted sensibility of the dentine, usually termed inflammation. The first of these conditions was the result of the direct action of chemical agents, although it was contended by some writers that inflammation was necessary, and that inflammation and death of the affected part preceded the action of the chemical agents, which produced the structural alteration. That this opinion was incorrect was demonstrated by the fact that long after the decomposition of the earthy salts, sensibility remained in the animal framework, so that, if touched with an instrument, the keenest pang of pain was oftentimes produced, and yet the action of chemical agents had been going on until the earthy salts were completely removed. So, then, it appeared obvious that the disease, or structural alteration was wholly the result of the action of chemical agents.

Where do these agents come from? Were they generated spontaneously in the mouth, or were they eliminated from the remains of particles of alimentary substances lodged in the interstices of the teeth? Doubtless from both sources. According to the tables of elective affinity there were only four acids capable of producing such effects upon the teeth, or in other words which precede the action of phosphoric acid, in their affinity for the lime which constitute the chief part of the solid ingredients entering into the composition of dentine. But it was well known to dentists and others that all the acids, both vegetable and mineral, did act upon the teeth, but not in the same way. There were only four, perhaps, that were capable of acting chemically, but others, as the muriatic, act as solvents.

The other pathological condition consisted merely in exalted sensibility or inflammation, as it had been oftentimes called, and perhaps very properly, although they might not find all the phenomena present characterizing the disease as exhibited in other parts of the body. This exalted sensibility might depend upon a great variety of circumstances, possibly upon mere constitutional idiosyncrasy, or temperament or habit of body, or upon some peculiar physical condition of the tooth itself. That was a point which had never been satisfactorily determined. They found it in teeth of a very dense structure, as well as in teeth of a chalky texture. They found it in persons in the enjoyment of the best constitutional health, and also in persons laboring under disease, so that it was difficult to determine, with any degree of certainty, upon what this peculiar sensibility depended. He would not take upon himself to determine, although it was known that some conditions of the general system were more favorable to the developement of this sensibility than others. Dyspeptic patients were peculiarly liable to it.

There were some other pathological conditions of dentine which had been noticed. One was suppuration, although he believed there was only one example of this upon record. He was disposed to think, from the description which had been given of it, that the writer who had recorded this example was mistaken, and that the earthy salts had been removed by the action of some acid, which had found its way to the part affected, through a fracture in the enamel; the animal framework remaining in a partially disorganized state, the supposed abscess having occurred immediately under the enamel. That was the only example he had found on record.

With regard to the remedial indications of these conditions, it was scarcely necessary for him to say anything, having already in another place, expressed his opinion at considerable length upon the subject; and more especially as so many gentlemen had spoken upon the subject, and had covered very nearly the whole ground. Yet he might be permitted to add a single remark. In that peculiar pathological condition designated exalted sensibility or inflammation, it was often the case that when the caries had extended only half way from the peripheral surface to the central chamber of the tooth, the painful impressions conveyed through the conducting medium of gold, when the tooth was filled, was such as to give rise to irritation and inflammation of the pulp, which had been known in numerous instances to result in suppuration. He had always succeeded in preventing this painful impression, by the interposition of some non-conductor between the gold and the floor of the cavity in the tooth. Sometimes he had filled the cavity completely with a non-conductor, and permitted it to remain for some weeks or months, when, upon removing it, he had been enabled to fill the tooth without any further apprehension. And in many cases where the nerve was actually exposed, nature employed means to prevent injury by the exudation of coagulable lymph and the formation of callous and osseous structure, very analogous to osteo-dentine or bone. He had several specimens sent to him by members of the profession, in which the pulp was converted into this substance.

The Convention then took a recess till 4 o'clock, P. M.

AFTERNOON SESSION.

On motion of Dr. Taft, the business committee was retained in office till next year, and was requested in the mean time, to prepare the business.

On motion of the same gentleman, the Convention resolved to close the discussion of the present subject at 5 o'clock.

Dr. Clark, of New Orleans, wished to settle the use of a term that had been used a great deal during the morning session, and that was "inflammation." He wished to inquire whether inflammation could be considered as anything else primarily than an increased circulation, and whether the other phenomena were not results of that.

The President (Dr. Harris,) stated that that question had never been very satisfactorily decided by writers upon pathology. There was a great deal of diversity of opinion upon the subject. Inflammation, no doubt, does sometimes occur without tumefaction,—all the other phenomena being present. But still as a general thing there is congestion, as well as an increase of vas-cular action in the affected part. He did not feel prepared to attempt a definition or explanation of a subject about which there still remained so much difference of opinion.

Dr. Watt remarked that inflammation was something more than increased circulation. There was increased circulation in the act of blushing, but no inflammation. In congestive fevers there was an increased amount of blood in the parts, but that was not inflammation.

Dr. Clark, of New Orleans, said the question was whether the word inflammation could be properly used where increased circulation only was present. There was no redness in the dentine; the red corpuscles of the blood did not ramify it; but there was sensitiveness indicating an abnormal state. He thought it was pretty clearly settled by writers that increased circulation could exist where there was no blood, but other fluid.

Dr. Munson, of Washington, thought that in inflammation the gelatinous portions of the blood stopped the free circulation of the red globules, and inflammation was the result.

The President considered this a very difficult question to pronounce positively upon.

Dr. McQuillen, of Philadelphia, considered not altogether a matter of tweedle-dum and tweedle-dee what term was used, as some gentlemen seemed to suppose. He repeated what he had remarked before, that there was but one of the phenomena present in diseased dentine, showing conclusively that the term inflammation was incorrectly applied. He might place his body in contact with fire and get it very warm, but that was not inflammation. None of them ever saw suppuration of the dentine, and dental caries was regarded by few as mortification, but rather as chemical decomposition.

Dr. Watt had suggested the use of nitrate of silver for this disease. He himself regarded it as a hazardous practice, likely to produce discoloration of the teeth. He had never used it on living teeth, but had found it to produce discoloration on dead teeth. He had seen a case to-day of a permanent discoloration of the skin produced by administering nitrate of silver for epilepsy.

Dr. Watt said that the application of nitrate of silver to any osseous tissue destroyed to a certain depth the vitality—the surface was destroyed and there was nothing more to be apprehended. But it was quite different when taken internally, the oxygen being deposited in the skin.

Dr. Clark, of New York, had been in the habit of using nitrate of silver to reduce sensitiveness of the dentine for more than twenty years ; in fact, the first effort he ever made was with that substance, and he had applied it a thousand times since. He let the nitrate discolor as much as it would and then scraped it out clean, and had never discovered a stain afterwards. He supposed that every dentist used it. He had also found advantage in making a temporary filling of tin or lead, letting it remain for a few weeks, when he found he could excavate much closer. By letting it remain six months he had made some of his finest operations in cases in which he could not have kept the patient quiet enough for a filling of gold at first.

Dr. Taylor begged leave to make a remark or two upon this subject of inflammation. Perhaps no two subjects had troubled pathologists more than those of fever and inflammation. They all knew that sometimes both the conditions of inflammation were absent. In acute inflammation increased circulation, no doubt, was the first, primary result, and yet congestion took place shortly afterwards and then diminished circulation. He accepted the definition of Proffessor Arthur, viz. : An altered state of the circulation with an increase of nervous sensibility. The question then naturally arises, is there an altered circulation in dentine ? If so, it followed that with exalted sensibility there was inflammation. The question of the presence of red blood has nothing to do with the definition, in his opinion. If there was increased vitality, circulation, and sensibility, he thought the term was as well applied, and as well defined, as the word "tissue." It was difficult to define caries; in it was presented some of the actual conditions of mortification and also of gangrene. Caries was an altered, diseased condition of the dentine with the death of the part. Sometimes they had seen caries progressing to a certain point and then becoming checked. Sometimes the softened part was either worn away or thrown off and got rid of, and there was left a hard glossy substance. Now he doubted whether denudition or abrasion could be considered caries: according to his idea caries was an altered, softened condition of the parts where the circulation had been arrested, producing an altered condition of the component parts of the tooth itself.

Dr. S. P. Miller, of Worcester, said he had used tannic acid alone and in combination with morphine to relieve sensibility. He had sometimes applied it two or three times where the nerve was exposed and then put on a covering and filled the tooth, and he had yet to learn of any ill consequence arising from it. He had also used a composition of five parts arsenic, ten of tannin, and ten of morphine to destroy nerves, leaving it in twenty-four hours for superficial caries. This he supposed they would call mal-practice, but he had been successful in applying it to his own teeth as well as those of others.

Dr. Taylor said this reminded him that Dr. Miller had promised to report a case, he would like to hear it now.

Dr. Miller said he had stated a case to Dr. Taylor, in which he had applied arsenic to his left canine tooth and thought he got along very successfully with it. It so happened, however, that the next day after the conversation with Dr. Taylor, it became very tender so that he could scarcely bear the touch of his tongue to it. He let it go on and at length it commenced getting better, and finally absorption took place, and now it was no longer sensitive—but he could eat with it and it would bear as hard a knock as the one on the other side. But he confessed that he would not try such an experiment on a patient. What he did was this: He told his student to apply arsenic as he could not bear the application of the instrument. Two or three applications were made. Having to leave town for several days, he carried the arsenic in the tooth during the time he was away.

If he had made only one application and attended to it properly he thought he should not have had the trouble he did. He had a constitutional trouble about the teeth, having lost five or six of his lower front teeth by absorption, therefore he did not think his own case a proper test. He had used arsenic for several families with admirable effect. In one of these families he had treated a superior molar of a boy with morphine and tannin some two months, and then filled it. It was last fall. During the winter he found the tooth as sensible in the lower part as if he had never exposed the nerve, and he had had no trouble with it since.

Dr. Townsend, of Philadelphia,—the gentleman admits then that he has destroyed the vitality of his own tooth?

Dr. Miller.—I do not; it is sensitive to-day to cold and hot water and to the scratch of his finger-nail. It is my purpose to have it bored to see, and I will report upon it hereafter.

Dr. Spencer Roberts, of Philadelphia, said he had applied caustic potash as successfully as most things. Like arsenic it produced inflammation but it passed off with less difficulty. In almost every person they would find at least one or two sensitive teeth. After excavating, he took some ground feldspar and with a piece of soft orange wood, he rubbed around the cavity two or three times to reduce the sensibility. He used chloride of zinc also, as well as caustic potash.

Dr. Austin, of Baltimore, being invited to say something upon the subject, begged leave to decline as he was not now engaged in the practice of this department of dentistry.

Dr. Munson, of Washington, had used tannin and morphine as his main remedy. He had such bad luck with arsenic that he abandoned it very early; he thought it was absorbed into the body of the tooth and killed the nerve. He wet tannin and morphine with cold water, and then prepared a solution of gum sandrach in alcohol, about the consistence of cream. Sometimes he first put into the bottom of the cavity a plug of asbestos, and applied the tannin and morphine on top of it, putting in a pledget of cotton wet in a solution of gum sandrach and alcohol, sealing it up and leaving it a number of days. If the tooth was still tender he made the application again. In that way he had usually succeeded in alleviating the pain.

Dr. Dwinelle said, many hypotheses had been suggested—he would like to suggest his. The dentine, as he had already stated, was ramified with tubuli, running at right angles, whose extremities reached out to the enamel, terminating in infinitisimel points. The other extremities opened into the nerve cavity like pipes out of a wall. There was the largest diameter of the tubuli. These tubuli were in all probability filled with some subtle fluid which was a medium for the transmission of sensation throughout the dentine. They were so small that the blood corpuscles could not flow through them. The nerve is encompassed with a sack, and has in conjunction a vein and artery forming a complete circulation, so that if the tooth is ever injected by hydriostatic force, it must be by this investing membrane being injected. Now this increased sensibility of the dentine was found universally to be accompanied by an exalted condition of the nerve, together with a general exaltation of the entire system toward the sensitiveness. This being the case it seemed to him easy to account for the sensitiveness of the dentine without a circulation, strictly speaking, in the tubuli. An exalted condition of the nerve of the tooth implied an injected condition—a superior hydrostatic condition, so to speak, charging more fully than usually the whole tubular structure. This fluid must of necessity be exceedingly subtle, like galvanism, magnetism, electricity or the neuratic fluid. It was the vital principle which converted life with these gross bodies.

BEST PREPARATION OF GOLD FOR FILLING.

Dr. Rich begged the indulgence of the Convention while he corrected an error in the report of the proceedings of the Convention at its meeting last year, as given in the *Dental News Letter*. The subject of conversation being the preparation of cylinders. He was reported thus :—

" Dr. Rich remarked that his preceptor in this country, Dr. Park, taught him to prepare his gold in cylinders, and formed them by rolling the gold over a watch-spring ; he then went on to give the method of introducing the gold, describing a plan of forming an open coil of gold, the interstices of which were filled with cylinders."

That report is incorrect. I said that in the early part of my practice in this city, I had used gold in the form of cylinders or rolls, as they were then styled, and that they were formed by rolling a ribbon of folded gold over a five sided watchmaker's brooch, that the gold so rolled was placed in the cavity endwise, so that it projected some distance out of it, and each roll was packed solid against the wall of the cavity before the next one was introduced. This I stated I had been taught by one of my preceptors, Dr. Park, who filled teeth exclusively by that method, but that I, after using gold in this form for several years, had abandoned it, as being an unsatisfactory method to me. I also stated that while I was using gold in this form, I had originated a method of filling in cases where the cavity had but two or three walls, which method was, to fold a ribbon of gold of such thickness that it would be quite stiff, and of such width that it would project out of the cavity when introduced edgewise. This ribbon was then formed into an open or loose coil resembling in form the main spring of a watch as it comes from the manufacturer. It was then introduced into the cavity edgewise, and opened or unwound until it touched every part of the walls, the interstices were then made as regular as possible, and filled with rolls, made as before described, the coil serving as a frame to keep the rolls in place while they were being packed.

Dr. GUNNING, of New York, suggested that it would be better to take up the subject in the morning.

The CHAIR thought it a pity to lose the time, and Dr. Townsend also hoped the new subject would commence.

It was suggested that each member in order would speak, but as several declined,

Dr. BEALE, of Philadelphia, said he hoped that the members who were now prepared, would be permitted to go on, and let those who were unwilling to speak, wait till to-morrow, when they would be better prepared.

Dr. DWINELLE said that gold foil had accomplished more for dentistry than any other auxiliary. But all things considered, he was now convinced that the best preparation was pure gold in a crystalline condition, and he founded his declaration on some little experience. While in Europe a few years ago, he had tried several preparations of sponge gold; but that was in an amorphous or unorganized state, and impracticable for filling, while this crystalline gold was highly organized, Soon after returning to this country, he fell in with Dr. Watts, of Utica, who was pursuing a course of experiments in producing the article that he had now perfected, and was all that any one could desire. He (Dr. D.) had acted in concert with Dr. Watts, who had spent thousands of dollars in experiments, supported by his devotion to the interests of the profession, and his honest conviction of the superiority of the article. It was superior to foil in some instances, because it was a more plastic article, more capable of being modeled and built up into desired forms. It could be worked with great facility, and made absolutely solid. This was no mere theory, for he had demonstrated it. He had made fillings of crystalline gold, and after they had been worn in the mouth eighteen months he had taken them out, sent the gold to an analytical chemist to ascertain their specific gravity, and found it equal to that of molten gold. None of his crystalline fillings had disentegrated or absorbed the fluids of the mouth; they were as good and as solid as the day they were first put in, and he expected them to stand fifty years hence, if the patient should live so long. He claimed to do with this article all and more than could be done with foil.

Dr. TOWNSEND, of Philadelphia, said he had worked with foil, for the last twenty-five years he believed, like Dr. Dwinelle. He believed a great many operations could be as well performed with gold foil as with crystalline gold. His friend said that a tooth could be built up into almost any desired shape with crystal gold; so it could with gold foil. The Vice President (Dr. Neall,) had, at this moment, two fillings in his inferior molar teeth which he (Dr. T.) inserted ten or eleven years ago, built up so as to antagonize with his upper ones. He built up the gold, one piece on top of another, welding it on until it was higher than he wanted it. One of these teeth had been in constant use for mastication ever since, and there they both were standing up like two cones. And this was no remarkable case. A year and a half ago he had, with gold foil, built up the crowns of two teeth with no wall around them, and they had been used for mastication ever since.

And now for his experience in the use of crystal gold. Three years ago he was induced to try it as something with which he could do unheard of things. He experimented several days on it with his fingers to get at the method of manipulating. In the first difficult case he had after that, he used the article, and was perfectly delighted with his success. He went on using it several months, when his patients began to come back. He noted all their cases in a book, and he found the edges of the filling breaking away and disentegration going on. Sometimes the gold had entirely disappeared, and in others he had to take it out. And to make the story short, the two ounces that he had used, to his best knowledge and belief, was all taken out, at least he hoped so, for he felt it his duty as an honest man to refill them with gold foil.

After that a better article, so called, was offered, and he made some experiments with that with a great deal of care, thinking that the defect in his previous work was owing to his bad manipulation. He spent two hours and a half, where he usually spent one on a foil filling. Some of these, so far as he could judge, seemed to have been successful, but his past failures made him afraid of them, and so he took them out. Some were perfect on the outside, but he found caries going on beneath the plug at the margin of the gum. From this want of success he abandoned crystal gold.

Again, on coming to New York, one of his friends who was an ardent admirer of crystal gold, wanted to show him his method of using it. That gentleman accordingly visited him at Philadelphia, bringing with him a newer article, and they spent one whole morning together packing the gold into a tooth which was held in their fingers. His friend pronounced it a perfectly solid filling, equal to molten gold. The next day he took his plugging forceps and with very little pressure pierced it nearly to the bottom of the cavity, and on examining it with the magnifying glass, he found a break around the margin just underneath the crust. Here was a filling put in under the best of circumstances, and packed in with all the force their arms could exert, and it was not solid. After that, he never had the confidence to try the article.

Dr. J. B. Rich said, that as he was the person who packed the filling referred to by Dr. Townsend, it was proper that he should reply at this time to the statements just made, as the case was unfairly stated. In the first place, the filling was not put in the cavity under favorable circumstances; and instead of a whole morning, there was not more than an hour and a half spent upon it, including the talking and explanations, although it was a large cavity in the antagonizing surface of a molar. Dr. Townsend with his fingers only, held the tooth upright upon the arm of his operating chair, so that it was impossible to prevent its having more or less motion. He (Dr. R.) inserted the filling while the tooth was thus held, with instruments that were imperfect, they being mere pieces of wire without handles, which he had taken there to show the points he used, and his mode of packing this kind of gold, but they were not at all suitable to pack the gold hard, they could not be held firm enough in the hand to exert any force with them. And he recollected distinctly stating to Dr. Townsend that that experiment was not intended as an illustration of the degree of density that could be attained, as the tooth could not be held steadily enough for that purpose. As relates to the Dr. piercing the filling with the plugging forceps, that fact does not amount to anything, as there was no attempt made to render it a dense one, the principal object being to show the adhesiveness of this form of gold. The crust that Dr. Townsend speaks of as having pierced through, was produced by burnishing the surface, not by packing. He had stated the circumstance exactly as it occurred and he would leave it to the judgment of even the most prejudiced, to decide if this was a fair experiment. He would insist, moreover, that it was not only unjust, but unbecoming in those who have any pretentions to scientific attainments, to pronounce crystal gold inferior to gold foil, upon the strength of the imperfect experiments they have made with it. If we question those closely who pronounce against crystal gold, we find that they have done so after a few trials, made generally with instruments of a different pattern from those they are accustomed to use, and before they have acquired any skill or practice in the manipulation of this form of gold. And this too, after they have been told over and over again, by those who claim to have used it successfully, that from the peculiar mode of manipulation, it is necessary to follow, in packing it; a considerable amount of education and practice is absolutely necessary before any success can be obtained. No person would pretend to have learned to make good fillings with foil in as short a time as these gentlemen have spent in their experiments with crystal gold. He (Dr. R.) would aver that crystal gold could be packed in the mouth as solid as a piece of gold plate. It had been done again and again. And the margin and every part of the filling can in all cases be made as firm and solid as they can possibly be made when formed of foil, and with a less amount of pressure. And when one has become skilled in its use, there are many cases where it can be packed with much greater facility than foil. By pressure applied with an ordinary filling instrument it had been made to enter into the very substance of the dentine, so that when portions of the bone were broken away from the filling, the gold adhered to it, and upon its being submitted to the microscope, the dentine presented an appearance similar to a piece of quartz, with particles of gold in it; the gold being actually imbedded in the tubuli of the dentine. Now who will pretend to say that a filling put in a cavity in the manner that that was, could be permeated by any fluid. In some of the cavities he had filled, as experiments, he had broken portions of the tooth away from the fillings, and upon examining the surface of the gold so exposed, he had found that it had received as perfect and sharp an impression of the walls of the cavity, as could have been taken by either gutta percha or sulphur. This is more than can be claimed for foil, and shows how utterly impossible it would be, for fluids to penetrate between the filling and the wall of the cavity, when the gold is properly packed.

Many persons, in making experiments with this gold, have used instruments entirely different in shape from those they use in packing foil,—this is one of the causes of their failure. The only change necessary to be made is in the points of the instruments, which, for crystal gold, requires to be dentated, so as to present a surface of sharp points. Another cause of failure is the attempt to use this gold in difficult cases before having acquired skill in its use. Let those who wish to experiment with it, confine their effort to plain, simple cases, until they have become thoroughly acquainted with its peculiarities, then let them try it in the difficult cases. He (Dr. Rich) had used it exclusively for the last thirteen months, and his good opinion of it increased every day.

Dr. BALLARD inquired of Dr. Townsend, how much crystalline gold he had used in all, in the mouth.

Dr. TOWNSEND said about two ounces.

Dr. BALLARD asked the same question of Dr. Dwinelle.

Dr. DWINELLE had used it exclusively for two years, and nearly so for three years. He could say he had used pounds of it. He had sometimes used an eighth of an ounce a day.

Dr. TOWNSEND said he had not intended in the remarks he made, to object to any gentleman's using the article; in fact, he would be glad to use it himself, if he could produce better results, even if it cost him more time. He was open to conviction, and success would afford him great pleasure.

Dr. BALLARD asked Dr. Rich how much he had used.

Dr. RICH replied, some five or six ounces.

Dr. S. A. MAIN, of New York, remarked, that in 1850, he made some crystalline gold for an experiment. He failed to get it perfected, nor had he seen any up to the present day that was perfect. The same trouble that he found then he had found since. He had found two evils to arise from its use: first, while the outer surface of the filling with sponge gold was most beautiful, upon splitting or sawing the filling into two, the inner surface was quite different; and second, he had never been able to pack it so as to make an even joining surface with the sharp edges of the cavity. He wished any one to tell him if he could pack a piece of crystal gold into indentations made with a file, in hard gold; or if he could exhibit an instrument with which it could be packed into every corner of the cavity as they could pack gold foil. He could make crystal gold with nitro muriatic acid, but it was a mistake to suppose that it was pure; if any one had succeeded in making it pure, he would say, bless the man who did it.

Dr. Dwinelle said that Dr. Mains' remarks did not apply to crystal gold, as now manufactured, but to another quite different article formed by its being dissolved in muriatic acid and then precipitated, a process discovered by Dr. Jackson, of Boston, who experimented a number of years with it. That had been discarded as worthless, and the article now manufactured by an entirely different process contained 999 and a fraction part of pure gold out of a 1000.

Dr. Townsend remarked that the very article which he first used, and which was afterward condemned, was assayed at the mint in Philadelphia, and found to contain $999\frac{8}{10}$ parts of pure gold out of 1000.

Dr. Dwinelle said it was not condemned for its impurity, but on account of the imperfect manner in which it was manufactured.

Dr. Allport said he had received a letter from Dr. Watts some days ago, in which he authorized him to offer $100 to any dentist who would take his present crystal gold, and put it through a chemical test, and detect the least trace of muriatic acid in it.

Dr. Ballard had seen the article made from gold coin, and he could assure the Convention, that no mercury or other metal was used in its manufacture, which at present was kept a secret. He only wished he could state more facts concerning it.

Dr. Dwinelle wished to dispose of the muriatic acid, Dr. Ballard having disposed of the mercury. Before the article was completed for the market, it was placed in long cylinders of glass, where it was washed with distilled water until the severest chemical tests indicated that there was not a particle of acid in gallons of the water, when, to make assurances doubly sure, a stream of water was turned on, and allowed to pass through it for twenty-four hours.

On motion, the Convention then adjourned till 9 o'clock to-morrow.

THIRD DAY.—MORNING SESSION.

The Convention met at 9 o'clock.

Dr. Taft moved to close the discussion on "The best preparation of gold for filling teeth," at twelve o'clock, which was carried.

Dr. Dixon, of Pottsville, remarked that the impression left on his mind by the discussion last evening, was this: That those who had been in the habit for years of using gold foil could make a better filling with it than they could with crystalline gold, while those who had used the crystalline gold to a great extent could make the best fillings with that. He objected to the shifting from one substance to another by the profession at large, in order to arrive at conclusions as to the best preparation for filling teeth. Was it not better to leave the experimenting to those who had turned their attention exclusively to some particular preparation. He must confess that, so far as the use of crystalline gold was concerned, he had a very limited experience. He preferred foil, but thought any dentist could do best by using the preparation to which he was most accustomed. He had seen gold foil fillings which could not be excelled, and instanced one that came under his notice, done by Dr. Townsend. It became necessary to take it out, and he found it as hard as amalgam. It was difficult to prevent fillings from becoming moist, but a good filling could be made with foil, even if it does become a little damp.

Dr. W. B. Roberts, of New York, said that there were radicals in the dental profession, as well as in politics. He had tried everything for filling, and he had found that in some cases, sponge or crystalline gold could be used where foil could not be used as well, while in other cases foil was best adapted. He practiced on the eclectic principle in this respect.

Dr. C. A. Kingsbury, of Mt. Holly, N. J., knew of only two preparations of gold for filling teeth, in the form of foil and sponge gold. The question ought more properly to read, which was the best of the two? Both preparations were good. He had been using gold in the form of foil for seventeen years. The crystal gold used at present was very different from the sponge gold first used by the profession. He had seen many cases of operations by dentists who had filled teeth with sponge gold, and he found that a large number of them had proved an entire failure. After being in the teeth a few months, he had found this sponge gold in a very porous and disintegrated state, and he had often found it necessary in these cases, for the preservation of the teeth, to remove the fillings and refill them with gold foil. Most excellent fillings could be made, however, with the crystal gold now used. He had used over an ounce of it making some fillings that gave him satisfaction. He thought there was a disposition to ascribe too much to one article to the exclusion of the other; it was yet to be decided, he thought, which was the best of the two.

He differed from Dr. Dixon in relation to experimenting. In the language of Liebig, nature speaks to us in a peculiar language; she answers at all times the questions we put to her, and such questions are experiments. An experiment is the expression of a thought; we are near the truth when the phenomena elicited by the experiment are corresponding to it, and when the reverse is the result, we may take it for granted that the question is falsely stated and the conception founded in error. He believed thorough experimenting was the only course to arrive at truth.

Dr. Dixon said that in speaking of experiment, he meant to refer to that flood of experiment which some seemed disposed to indulge in. He was glad to see these experiments made in a proper way, and hoped they would be continued.

Dr. T. L. Buckingham, of Philadelphia, suggested that he would like to hear some one tell how to use crystalline gold. There were annealed gold, cylinders, pellets, ropes, and ribbons, each requiring a peculiar manipulation. They had been told that sponge gold was the very best article, but no one had given them a description of the manner in which to use it. He must confess that he had failed, in most cases, in attempting to use it.

It was said that it could be welded together and made perfectly solid. What was meant by the term solid? It was applied to metals to indicate a peculiar cohesive, crystalline structure. It was no evidence because you had the largest amount of matter in a given bulk that the particles were cohesive. Ice occupies a larger space than water, but is much more cohesive? We know nothing about the nature of cohesive attraction except the effects produced. Certain metals in a pure state were capable of being welded without heat. Could they weld particles of gold so as to become perfectly hard and cohesive? Wet clay could be compressed so as to have more material in the same bulk than was contained in a burnt brick, and yet the clay was held together by mechanical adhesion, and the brick by cohesive attraction. This was mere theory, but it deserved attention, for in applying this sponge gold in his own practice, though the fillings appeared to be solid, they had broken down and washed away like clay. Were not the particles therefore held together by the same force as pressed clay? Did it not require vitrefaction or fusion to make the gold solid? The process of annealing was done by means of a high temperature; might not the heat cause a change in the arrangement of the particles by which the attraction of cohesion was increased? Even at a low temperature, gold by rolling was rendered stiff and hard; heated in the fire and it became soft again. His own opinion was that they could not weld crystalline gold by the process of filling. He had seen fillings of this material where the surface was not burnished, absorb repeatedly drops of moisture. He believed he had not been deceived in that experiment. If that was so, would not moisture penetrate the whole lump and break it up? It was possible that it might be held together by the interlocking of the crystalline particles of gold, the same as gold foil when packed into a cavity.

Dr. C. S. Weeks, of Bedford, N. Y., had used crystalline gold but little. His first attempt three years ago with sponge gold was a total failure. About a year since he began to use the new crystalline gold, and after several unsuccessful attempts he at last succeeded in some kinds of cavities. He found great difficulty in keeping some cavities dry, but where they were shallow and easily accessible, he could make a better filling than with foil, while with deep cavities not easily got at, he could succeed better with foil.

Dr. AUSTIN, of Baltimore, said that if a crystalline gold filling when subjected to the test was malleable and ductile, it was therefore held together by an equally powerful force with that called cohesion, and it mattered not whether it was actual cohesive attraction or not. If crystal gold could be made as compact as coin it was a new discovery. He did not regard the illustration of the burnt brick and compressed clay as hardly in point. Before going into the fire the elementary substances were in a state very different from what they were on coming out ; the silica and alumina became a new chemical compound which possessed cohesive attraction. Reduce that brick to powder, and it was no longer cohesive, or capable of as much cohesion as the clay—in fact, it was not clay, it was brick dust. If a plug of crystalline gold could be rolled out into a thin plate, and drawn into wire, and having the same specific gravity, it followed that it was as solid as coin. Because metals needed annealing, it did not follow that they were not as solid as before. There was some mysterious agency in heat, but he could not see how a crystal gold plug differed essentially from molten gold, if the specific gravity was the same.

Dr. A. MERITT ASSAY, of Philadelphia, gave an account of some experiments made by him, corroborating the remarks of the last speaker, and showing that crystalized gold became solidified in the cavity. He had tested a filling made with sponge gold by the hammer and rollers making it into a very thin plate. He happened to have that specimen in his pocket-book, which he exhibited to the Convention. He had used probably some six ounces of sponge gold and had yet to see the first discoloration of a tooth. He had used it in cavities where without it he was sure he would have been obliged either to use amalgam or extract the tooth. He intended to use it more freely hereafter. No more difficulty attended the use of it than in the case of gold foil. Great care in either case was required to keep the cavity dry ; a wet filling of sponge gold would in time peel off or crumble just as a wet filling of foil would do.

Instead of using the sponge gold in little round pieces, he thought it should be applied in flat pieces and packed with an instrument much finer than those made by the manufacturers. He ground his instruments off and serrated them to suit himself.

Dr. WATT, of Ohio, rose to correct the statement of Dr. Buckingham about the impossibility of welding gold except by heat. Gold was one of the welding metals without heat, as every worker in it knew.

Dr. RICH stated that not only gold, but tin and lead, were weldable when cold.

Dr. GEORGE C. WHITE, of New York, said it was but recently that their attention had been called to crystal gold for filling. They knew, on the other hand, that foil had been used from the beginning of dentistry. They had seen what others had done in the use of foil—that fillings had been inserted in the teeth, and had preserved them for generations. On the other hand, fillings had been introduced by other persons, which it had been necessary to renew from year to year, until finally the teeth themselves were destroyed. Two points were necessary to be reached in filling the teeth: first, thoroughness of operation; and second, skilfulness of manipulation. With these two, any honest man could succeed, either with foil or crystal gold.

Dr. CLARK, of New Orleans, thought that if foil was properly used, and its properties were correctly understood, it would accomplish what every honest dentist would desire to accomplish, the preservation of the teeth. He would undertake to build up a five-cent piece into the shape of a thimble by gold foil of even layers and straight, smooth laminæ, with the pressure of five pounds only, applied with a single point, and any gentleman here could do the same. Still he was much interested in sponge gold, thinking it might be a valuable adjunct to foil. They could do wonderful things with foil, but there seem to be properties in sponge gold not possessed by any other material. He could not say that he could do everything with foil that could be done with sponge gold. There were certain properties about the use of well prepared crystal gold that led him to believe that there were cases which could be treated with more facility by its use than gold foil. He related an achievement of Dr. Allport, of

Chicago, in restoring the exterior and cutting edge of teeth, which to him was more gratifying to look upon than the productions of a Raphael. The front incisors were separated as if a file had been passed between them a quarter of an inch thick, nearly down to the gum. These teeth had been built up and restored to their original shape, their approximate edges almost touched, and they were perfectly adapted to mastication. They had been used nineteen months. He understood that Dr. Allport used foil in connection with crystalline gold in the same cavities. He intended when he went home to try the article.

Dr. Allport having been solicited to state how he proceeded to fill teeth in such cases as these, said that he generally used crystal gold entirely; yet in many difficult cases, for instance, in building up a tooth where two sides were standing, he used more cylinder than crystal gold. He conceived that foil could not be used in particular cases as successfully as crystal. Miracles almost had been performed with gold foil. He had seen fillings made by Dr. Blakesly, of Utica, thirty-five years ago, as perfect now as then, so far as the preservation of the teeth was concerned. One great desideratum in all operations was the saving of time; in this respect he did not regard crystals as advantageous as foil. In many cases he could save one-third or one-half the time with foil. He used also pellets for cases where they seemed better adapted. In this respect every one must use his own judgment; the great thing in filling teeth was the exercise of good sterling common sense. It required more time to learn to use crystal gold, in his judgment, than foil. It required months of hard labor to learn to fill a tooth with gold foil properly, and it required more to learn to do it with crystal gold. But when the art of using it was once acquired, more could be accomplished with it than with foil.

It was said that crystal gold fillings would break down, and that the bottom of the cavities would become soft. Last January he had filled a superior cannine tooth with crystal gold; the whole of the bone of the tooth was gone, there being nothing left but the enamel, and that so thin, that when excavating the cavity the instrument could be seen through it. This filling was worn until April, when the crown was broken off, by biting upon something hard, and came away in pieces, leaving some fragments of the tooth remaining. He saw that tooth two or three days ago, when he filed the edges where the filling came in contact with the enamel, and polished them. There that plug remained to-day, perfect for all the purposes of mastication. He cited this to show that crystal gold would not crumble, if it even did, it was owing not so much to the gold as to the manner of using it. And here he would remark, that much of Dr. Watt's gold made previous to the last year was bad, and even now he regretted to say, much of it was not what could be desired; though it was said to be all alike, there was a difference from some cause or other. The difference was in the working properties, some would adhere almost instantly, while other portions would not.

Dr. SEABURY used more foil than crystalline gold, but in certain cases he knew he could accomplish what he could not with foil. Dr. Allport expressed his experience.

Dr. ARTHUR, of Philadelphia, had in various times and places borne testimony to sponge gold, and had not yet ever any reason to change his opinion. Any failures in his operations he could attribute to some defect of manipulation or some other circumstance which made it exceedingly difficult to perform a good operation. Though some of the fillings were after a lapse of time, not perfectly satisfactory in appearance, yet even then, there was no discoloration below the surface, and no diminution of the density of the filling.

But he no longer used sponge gold; its use had led him to the discovery of an entirely different method of operating from what he had previously pursued, and he had since used gold foil in an entirely different manner. He had been told by a number of gentlemen that this was no new thing, that they had been in the habit of depending upon the adhesive quality of gold foil for years. Such had not been the case with him and many others that he knew. A great many manufacturers of gold foil had been lead to make an effort to avoid the objection of the want of an adhesive quality, which prevented making a good operation when used in the ordinary way. But he was assured by gentlemen who had worked in gold foil, that it was only necessary to produce a perfectly pure article of gold, to possess without annealing this strong adhesive quality, so that it could be welded together in a solid mass like sponge gold. If therefore gold foil could be made to adhere in the same manner as sponge gold, why could it not be used in the same manner and with the same results? Every manufacturer, he had been told, could make it with this adhesive quality, and it could be used precisely as sponge gold, with the exception that the instrument should be somewhat sharply serrated and somewhat more hardened. It was well known that gold foil, no matter how adhesive in the beginning, in a very short time, if exposed to the atmosphere, would lose this adhesive property. But this change which was confined entirely to the surface, could be entirely removed, and the gold restored to its original condition by subjecting it to a very moderate heat—something short of a red heat—ordinarily called annealing. It was only necessary to place it upon a plate and hold it over a spirit lamp until the plate becomes hot. In an article published by a prominent writer on electric metallurgy, it was stated that any metal held in a current of air becomes covered with a film of air, and that it is impossible to get a galvanic deposit upon that surface until it is exposed to heat. It could not be a film of moisture because a sheet of paper could be passed into water and removed perfectly dry. He had endeavored to call the attention of the profession to this method of using gold foil, and a number about Philadelphia were now using it to the exclusion of every other, and said that no inducement could bring them back to any other material. Dr. A. referred to an operation performed by Dr. Colwell, where foil was used in an upper molar tooth, with nothing remaining but the interior surface and a small portion of the outer wall, the most beautiful operation he ever saw, which could not be surpassed by the use of crystal gold.

Dr. Miller, of Massachusetts, said that he had some experience in the use of crystal gold, and he regarded it as a very valuable auxiliary to the profession. He had no doubt that this form of gold did possess valuable qualities, for upon that subject, they had been enlightened with the discoveries of men of experience and learning. He had used sponge gold and cylinders in combination, and they worked well together under certain circumstances. He was an eclectic himself, and used the best material at his command adapted to suit the particular case in hand. When a new thing was introduced into the profession he investigated its merits, and adopted whatever he found to be valuable about it. He knew of no other way to perfect success. Life was made up of experiments. If objection was made to experimenting, it would cut off all improvement. His object in the practice of his profession was, to make a thorough examination of all new discoveries in the line of his art, and adopt whatever was practical and valuable.

Dr. SEARLE, of Springfield, mentioned a case of Dr. Arthur's that came under his notice, where a superior bi-cuspid with only the outer half of the crown remaining, was built up so that it articulated perfectly with the lower one.

In regard to cylinders, he had used them for twelve years. Dr. Clark had said at Philadelphia, that he was the original discoverer, and he had no doubt he was *an* original discoverer.

Dr. CLARK, of New Orleans, said he borrowed the idea from Dr. F. H. Badger, supposing that he used them entirely. Dr. B. would not state how he did it, but he (Dr. C.) went to work to find out, and as he thought discovered it. He shortly afterwards found that Dr. Badger repudiated the idea entirely that teeth could be filled with cylinders alone, saying that he only used them in the centre of the cavity. He did not claim any original discovery and never had. What he had learned, he gave freely to the profession, as it was every man's duty to do.

Dr. SEARLE did not himself claim any originality ; the idea came to him in 1840, through a student of Dr. Keep, of Boston.

Dr. HESSEL, of New York, had not yet seen any better work done with crystal gold than could be done by the same operators with foil. He was one of the earliest to experiment in the use of sponge gold. He manufactured it himself in the most pure manner by means of an electro-galvanic battery; but it was expensive and therefore impracticable. Sponge gold in a pure state was essentially the same as gold foil, and subject to the same conditions. Though it would not change when tested by strong acids, yet in some mouths it would turn black, showing that the fluids of the mouth was a powerful solvent. Gold foil, if rightly and skilfully used, would stand all the tests required.

Dr. McKellops, of St. Louis, had been very unfortunate at first in the use of crystal gold, whether from imperfect manipulation or because the article obtained was imperfect, he could not say. He found that the plugs would change after a lapse of time. The article first used, however, was condemned by Mr. Nichols, of the firm of A. J. Watts & Co., who furnished him with a better article, which so far as he had used it, he found excellent. For large, saucer-shaped cavities with a small margin to hold in the fillings, he had found it very advantageous. It should not be condemned after three or four trials. He had used some five or six ounces of the superior article, and he believed that by the next meeting of this Convention, they would all be satisfied with it. He was very much pleased however, with Dr. Arthur's method, and was going to Philadelphia to learn it.

Dr. Gunning, of New York, said that according to the general experience of gentlemen who had used crystal gold, it required a great amount of pressure to make it solid. The density of the filling was a matter of great importance, and it seemed that more labor and time was required upon crystal gold than upon foil. That being the case, though a strong patient of forty years of age might well bear the great amount of pressure requisite with impunity, it would be frightful, perhaps, to a young delicate female. Time, to a person suffering pain, is a matter of some consideration. There were certain fillings which on account of their not being subject to wear, did not require so great density as others; would it be proper in such cases, under an excited condition of the nervous sensibility, to put in a larger quantity of crystal gold, subjecting the patient to great suffering, and running the risk in some cases, perhaps, of ruining the tooth in the socket, when foil could be inserted in less time and with less pressure and pain. The object of the dentist should be, not to see how dense a filling he could make in all cases, but to make a filling which would in all probability outlast the tooth in the socket. He contended that theoretical nicety was not their aim, but to make fillings best adapted to the particular cases. He would not concede that crystal gold was the best article in cases which would not admit of great pressure; and in gold foil, he insisted, that they had an article which they could control, and with it they could, in most cases, fill cavities in such a manner as to perfectly exclude moisture and save the teeth. The foil manufactured was not all equally adhesive, but they could use the more adhesive foil for cavities where the greatest care and nicety was required.

Dr. G. not having completed his remarks, it was moved that the speaker be allowed ten minutes longer.

Dr. BALLARD moved as an amendment, that the discussion continue for the remainder of the morning session.

Dr. CLARK, of Louisiana, opposed the motion, as he wished some time to be devoted to the exhibition of improvements in instruments.

Dr. TAFT moved an amendment to the amendment, by continuing the discussion till one o'clock.

Dr. SEARLE said there were complaints that the old hackneyed subjects were kept before the Convention, and day after to-morrow would be Sunday.

Dr. RICH moved the previous question, which was carried.

The question being put on the amendments severally, and on the original motion, they were all rejected.

Eight minutes being left of the time allotted to this discussion,

Dr. FLAGG, of Philadelphia, obtained the floor, and remarked that, as regards the materials for filling, they knew infinitely more of foil than any other preparation. Work done by such men as Hudson, and many other deceased brethren of the profession, had stood forty, fifty, and sixty years, and fillings made twenty-five years ago, could not be told from work done twenty-four hours ago.

As to the method of using foil, it should be so used as to be the most thoroughly condensed, with the least amount of labor. He had been pleased with the remarks of Dr. Arthur.

Dr. TAFT moved that this subject be resumed at four o'clock this afternoon. Lost.

THE FEES QUESTION.

Dr. Taylor from the Special Committee, to whom was referred the paper of Dr. Townsend on "Professional Fees," reported that they regarded the subject as one of great importance to the profession, and the views therein expressed, as embodying principles which alone can lead to professional excellence ; and while we would thus commend the whole, we would especially draw the attention of this Convention to that part which treats upon professional counsel and advice. The committee would not pretend to even suggest the amount of compensation which should be charged for any given operation, yet we cannot but recommend that this Convention do express their decided disapprobtion to all that course of conduct, which so cheapens dental operations, that the good of the patient must be the sacrifice. We entirely disapprove the idea that an intelligent people will not appreciate and pay for the most perfect operations. We offer, therefore, the following resolutions :—

Resolved, That it is the duty of every member of the profession to so charge for his services, that he shall be well paid for all the time and the best skill he can expend on an operation, and which shall be an inducement for further excellence.

Resolved, That the best interests of dental science demand that a fair and liberal fee shall be charged for professional counsel and advice.

Resolved, That our profession, having for its basis true knowledge and skill, we cannot but regard that knowledge which may prevent disease as of equal, yea, more value to our patients than that which may arrest or cure.

The report was adopted unanimously.

Dr. Rich moved that a committee of three be appointed to revise and prepare the report of the proceedings for publication, and to have the revised report and Dr. Townsend's paper published entire, in all the dental journals. Adopted. The Chair appointed Drs. Rich, Maguire, and Dwinelle as such committee.

Dr. Van Patten, of Washington, D. C., moved that at five o'clock this evening, the Convention proceed to consider the time and place of the next meeting. Carried.

A notice was then read, inviting the dentists from abroad, to an entertainment, to be given by the dentists of New York and Brooklyn, at Dodworth's Rooms, this evening. The members to meet at Hope Chapel, at eight o clock, P. M.

Dr. Clark, of Louisiana, moved that one hour be now devoted to the exhibition of Dental Improvements.

Dr. W. B. Roberts, of New York, exhibited a set of teeth made with continuous gum mounted on platinum.

Dr. Loomis, of Cambridge, Mass., presented a specimen of artificial teeth for which he claimed superiority, dispensing with a metallic plate, and substituting a mineral base, the whole forming a solid piece.

Dr. Wheat, of New Haven, produced a specimen of teeth inserted in hard rubber compound. The hard rubber was perfectly free from any liability to absorption, and it was impossible to break the teeth so inserted, especially the grinders.

Dr. Mallette, of New Haven, presented another specimen, made in a similar way, which he and his partner had, he believed, perfected. There was nothing but mineral teeth and hard rubber used—no metal. He proceeded to describe the method of preparation.

From all that could be gathered by the reporter, it is believed that there is a patent which bars the free use of each of the above improvements; in the two latter cases, however, it is only the use of Goodyear's Vulcanizing Patent that stands in the way.

Dr. Franklin, of Newark, exhibited a fluid lamp adjusted on a balance, with an inverted syphon, running from the cup to the wick. It was so adjusted, that as the fluid became exhausted, the part containing the wick gradually lowered, causing a uniform flow of alcohol. It had also the advantage from the arrangement of the syphon, of being perfectly safe from explosion. When the lamp is not in use, and the cap is put on the wick, then, the wick part being the heaviest, it was kept in a horizontal position by a spring underneath.

Dr. Malette exhibited a plate punch so arranged that two holes could be punched at once, corresponding with the pins for the backs in artificial teeth, one punch being moveable. It was used for punching two holes in the plates, suited to the pins in the artificial teeth.

Dr. Harris, of Baltimore, exhibited an instrument invented by Dr. Putnam, for producing local anasthesia, very useful for extracting teeth without pain.

Dr. Putnam stated that the agent used was ice and salt, and the instrument was so contrived, that the application could be made to the smallest portion of any external part of the body. The gums were frozen by the application, and consequently the teeth were extracted without pain. Some gentlemen raised an objection to this application, on account of its causing sloughing sores in the gums.

[The reporter here feels it his duty to state, that the report which appeared in the *Express*, concerning this invention, in which it is stated that the Convention adjourned to Dr. Putnam's house to witness the operation, is incorrect, and the fact of the report appears under the head of " Afternoon Session," when the explanation was made in the morning, leads to a suspicion that the reporter had some other purpose in view, than to give a true and fair account of the matter, and the subsequent use made of that report confirms the suspicion.]

Dr. Taft, of Ohio, exhibited a blow-pipe for throwing a warm jet of air into cavities for the purpose of drying them. It consisted in an india-rubber bag, with a metal tube attached, which might be filled with a heated substance that would retain heat well, the air passing through it by pressing on the bag.

There was also exhibited an instrument to enable dentists to get a more perfect articulation of teeth.

The Convention took a recess till 4 o'clock.

AFTERNOON SESSION.

A motion was made and carried, that the Convention resume the consideration of the subject of the best preparation of gold for filling teeth.

Dr. McQuillen said that his experience had not been a successful one in the use of sponge gold. But gentlemen would say that his experience had been so limited, that he could not arrive at correct conclusions in regard to this matter. He had not arrived at the conclusions he had stated, so much from his own experience, as from the failures of eminent operators. Therefore he stood forward as a witness in favor of the objections urged against sponge gold, that its use produced discoloration and disintegration of the teeth.

He had tried the plan of annealing, explained by Dr. Arthur, and found that he could not introduce as much gold into a given cavity, as with the ordinary gold foil that he received from Abby. He believed the annealed gold hardened under the instrument so rapidly as to choke up. There was a point where they must cease to use the instrument when operating with ordinary gold foil, as there was a point where the painter must lay aside his pencil; otherwise they might get such a temper in the gold that the next gold put in would not adhere. He had reason to infer from his experience in the use of annealed gold, that the specific gravity of a filling, was not equal to that of one made with the ordinary foil, judging from the quantity used in the cavity.

Dr. BALLARD said that he could speak with some confidence upon this subject, gained by an experience of some years. He had used crystalline gold for three years with great success. He had the pleasure of seeing the first operation that was ever performed with crystalline gold, and it was perfectly successful. The result of his experience could be summed up in a very few words. There was no question that a vast amount of improperly prepared gold had been in the market, imperfectly purified and imperfect in its microscopic structure. He wished only to speak of perfectly made gold, which contained all the requisites that were desirable for a successful operation. Many failures, undoubtedly, had occurred with the very best gold, but his own experience taught him that these failures had been the result of imperfect manipulation. He did not know a man anywhere who did not make a failure sometimes. In a majority of cases occurring in his practice of three years, he had used crystalline gold with success, but there were cases in which it would not answer. He wished to state the following reasons in favor of its use—its exceedingly delicate structure, which enabled the dentist to place it in positions so exposed, that nothing else could be retained there, its perfect purity, and its density.

In regard to porosity of fillings, it was perfectly evident that a perfectly solid filling could not become porous without expanding and disrupting the plug, or splitting the tooth. A porous filling, therefore, must have been left so in the beginning ; gold once deprived of its porosity, could not become porous again. The experiment related yesterday, by Dr. Dwinelle, ought to convince any one that a filling of crystal gold could be made perfectly solid.

Dr. TAFT considered the method adopted by Dr. Arthur, as a very great advance in the use of gold, and he intended to try it. Leaving that out of view, he preferred in most cases crystal gold to gold foil. There was a confusion of terms in speaking of sponge gold, many applying it to all the preparations that had been made and called by that name, perceiving no difference between the varieties that had been produced. There were three forms in use for filling. Sponge gold he considered to be simply granulated gold obtained from precipitation ; by various methods of precipitation they could get an article with which they could fill deep cavities. Then there was structural or fibrous gold. Then again there was another form in which its crystals were larger and more definitely formed, than in the two previously mentioned. In that variety which had no structural character, but was simply gold in a state of minute division, they had to depend entirely upon its property of cohesion in introducing it into a cavity. This form of sponge gold was not reliable, although occasionally tolerable fillings might be made with it. In the structural or fibrous gold—which might be denominated crystalline—besides the adhesiveness, it was retained in the cavity by the fibers folding upon one another. Again in gold formed of definite crystals, they not only had the cohesion property, but the interlacing of the angles of the crystals to retain the filling in a solid state. In the use of foil well annealed, there was a cohesion doubtless sufficient to retain the particles together ; but in the crystalline gold there was besides cohesion, this interlacing of the particles which they did not have in foil. No doubt with sufficiently strong walls they could build up foil into a pyramid as described by Dr. Townsend, but he thought it required much more skill with foil than with crystal gold ; and he conceived that there were many cases where crystalline gold could be used where foil could not, as in the case described by Dr. Clark, where one-third of the approximate edges of the incisors are broken away.

The PRESIDENT (Dr. Harris,) said that the preservation of the natural teeth was of more importance than the replacing of those organs by artificial substitutes. He rose not so much to give his own experience in the use of crystalline gold, as the results he had seen from its use by other operators. He had been in the habit of using crystal gold for three or four years. During the first two years of his practice in using it, the results were not so satisfactory as he could have wished, but more recently they had proved so, although he was not yet prepared to lay aside the use of foil. He used three ounces of foil to one of crystalline gold. When he had heard doubts expressed by several members of this Convention, with regard to the practicability of making fillings with crystalline gold of as much value and permanency as those made with foil, he felt it due to the manufacturers of crystalline gold to say, that he had seen fillings of this material that had been used in the mouth upward of two years, which were in a most perfect state of preservation, equal, and in some cases, when all the circumstances connected with the cases were considered, superior to any fillings with foil.

A case occurred to him at this moment, of a young lady who formerly resided in this city, who recently came into his office to have her teeth examined. Many of her teeth were made up almost apparently of gold, several crowns having been destroyed. One of these crowns, in particular, had been built up with crystalline gold, and although it had been there two years, it was as perfect as any filling could possibly be. There were thirty fillings or more in all, made by Dr. Ballard, of crystalline gold, two years ago. An upper molar that had been decayed away, so that if he was not mistaken, the walls were entirely gone with the exception of a small portion which came down below the margin of the gum, was built up and answered all the purposes of a natural tooth. He could name other operators, Dr. Dwinelle particularly, who had realized his fullest expectations with regard to this article. He was fully satisfied that there were cases in which this form of gold could be used more advantageously than foil; but on the other hand, he might say the the same in favor of foil. It would be difficult for him to say which he regarded as the most valuable, though if he could have but one he would hold on to the foil, having used it so long that he had become in that respect, something of an "old fogy."

Dr. RICH said, the difficulty of procuring foil that was sufficiently adhesive, even after he had annealed it, had induced him to try the merits of crystal gold. The experiments he had made with it, had demonstrated beyond a doubt, that its particles would adhere, it could be made solid, and when solid it was impermeable.

Among the experiments made to ascertain these facts, were the following: Portions of this gold were packed in the cavities of teeth with ordinary instruments that he used every day in his practice. One of the filling so formed was drawn out into wire, another was rolled into plate, and a third was hammered into plate on the anvil. Another portion that formed a small disc about an eighth of an inch thick, was secured on the end of the tube of an air pump; a drop of water was then placed upon the upper surface of the disc, and the tube exhausted with the full force of the pump, (which was a powerful one,) the water remained upon the surface. The disc was then ground down to about one half its original thickness, and the experiment repeated with the same result. The objection to this gold that it requires more time to consolidate it than is necessary for foil, will not be sustained when it becomes better known. When he first used it, a filling of crystal gold required double the time that he would have spent on one of foil. Now he packed and finished it with as great facility as he did foil, and found it more easy to prepare, of convenient sizes, for introducing into the cavity. In difficult cases, as, for instance, where the filling has to be built up independent of the support of the walls of the cavity, crystal gold can be used with much greater facility than foil. This, is a very important advantage. The improved crystal gold, as manufactured now, by A. J. Watts & Co., did not of itself produce discoloration, it was *pure* gold without the least trace of any other substance, and therefore it could not discolor the teeth.

Several professional friends had told him, that they had cases in their practice, where they had used crystal gold, and it had produced discoloration ; as he (Dr. R.) doubted that the gold had been the cause of that effect, he had requested them, for their mutual satisfaction, to allow him to see the fillings removed, and to examine the cases critically. In several instances they had done so ; the fillings were removed, and the gold, and the cavities examined, and in every case it was clearly evident that the fault was not in the gold, but in the manipulation, either in preparing the cavity or in packing the gold, and in every case, it was easy to decide to which of these two causes the failure was to be attributed.

The statement is often made, that the surface part of a crystal gold filling, becomes quite solid and hard, while the rest of it remains soft and porous. When this occurs, it is the fault of the manipulation ; if one part of the filling could be made solid, the whole could. The amount of pressure that made the surface dense would have had the same effect upon any other part of the filling, if it had been applied there. The proper method was, to pack the filling solid from the bottom of the cavity, and introduce the gold in small portions, each of which must be made as solid as may be desired, before the portion which is to be packed on top of it is introduced. One of the most valuable properties of crystal gold is, that it can be made of any given degree of density of which gold is susceptible, with much less pressure, than would be necessary to produce the same degree of density in foil. In finishing the surface of the gold, when the cavity is filled, this peculiarity must be borne in mind, and in consolidating and finishing the gold at the margin, great care is necessary to avoid working it too much at that point, for if as much labor was spent upon it, as would be necessary to make the margin of a filling of foil as solid and as hard as it ought to be, the margin of the crystal gold filling would become brittle, and would easily break and crumble up. The same effect would be produced with foil ; when it reached the same degree of density, that would also become brittle.

PLACE OF NEXT MEETING.

The Convention then proceeded to appoint the place for the next meeting.

Washington, Boston, Niagara Falls, Saratoga, White Sulphur Springs, (Va.,) Baltimore, Cincinnati and St. Louis, having been severally proposed, the Convention decided, by a division of 56 to 40, that the next meeting shall be held in Boston.

On motion, it was agreed that when the Convention adjourn, they adjourn to meet at Boston, on the first Tuesday in August, 1857.

LOCAL SOCIETIES.

Dr. Blandy, of Baltimore, offered the following resolution, which was adopted :—

Resolved, That this Convention recommend the formation of local or state societies, and that each association thus formed, be requested to send one or more delegates to each meeting of this Convention, thus making our annual convocation emphatically the great central Congress of the Dental profession.

CREDIT FOR NEW IMPROVEMENTS.

Dr. Taylor moved the following resolution, which was adopted :—

Resolved, That in the opinion of this body, the credit due for new discoveries or useful modes of operating, belongs more to those who have given those improvements to the profession, than to those who pretend to have discovered the same at a previous period.

The following resolution was offered by Dr. Buckingham and adopted :—

Resolved, That the Corresponding Secretary request the members of this Convention and others, who have anything new or useful, to present them at the next meeting.

SCALE OF PRICES.

Dr. Shaw, of Philadelphia, moved the following resolution :

Resolved, That a committee of be appointed to inquire into the expediency of adopting a scale of minimum prices, every practioner to have the privilege to have a scale of prices of his own, as much higher as he may consider proper, and that it shall be considered derogatory to the character of any dentist, to go below the scale that may be adopted by the Convention; said committee to report at the next meeting of the Convention.

The resolution was adopted, and the Chair appointed as the committee, Drs. A. R. Shaw, C. W. Ballard, and E. Townsend.

COMMITTEE ON PUBLICATION.

The following resolution, offered by Dr. BONSALL, was adopted:—

Resolved, That the committee on the publication of Dr. Townsend's address, be authorized to draw on the Treasurer for the expense of publishing the twelve hundred copies ordered by the Convention.

The following resolution, offered by Dr. RICH, was adopted:—

Resolved, That the publishing committee be authorized to draw on the treasurer for the expense of furnishing stereotype plates of the proceedings of the Convention, and Dr. Townsend's essay, to such of the Dental Journals, as shall publish them entire.

VOTES OF THANKS.

A unanimous vote of thanks was then passed, on motion of Dr. AUSTIN, to the Dentists of New York, Brooklyn and Williamsburg, for the courtesies received by the members from abroad, and also, on motion of Dr. WATT, to Messrs. Jones, White & McCurdy, for their excellent entertainment on Thursday evening.

A vote of thanks was then, on motion of Dr. COATES, of Virginia, tendered to the worthy President of the Convention, for the dignity and impartial manner with which he had presided over the deliberations.

The Convention then on motion, adjourned *sine die*.

AMERICAN DENTAL CONVENTION.

The second Annual Meeting of this body was held in the city of New York, August 6th, 7th and 8th. The topics for conversation or discussion were, 1st, The pathological condition of diseased dentine and its treatment, 2d, The best preparation of gold for filling. These subjects were much more fully discussed and ably commented on than the report indicates, many valuable remarks being left out, and some particular individuals are made to indulge in language they did not utter. This we only mention, en passant, knowing it to be almost impossible to give a verbatim report of the language of rapid speakers. In answer to numerous in quiries and complaints for the long delay in the appearance of this report, we assure the Profession the fault does not lay at our door Sept. 11th, 12 M. We are writing this article at the printers, the whole of the proceedings have not been furnished in proof, plate or otherwise, and notwithstanding the repeated assurance of the Chairman of the Committee on Publishing that he had furnished copy faster than the stereotyper could set it up, we find him at the stereotypers on Tuesday, Sept. 9th, at 5½ P. M., (when we called in company with Dr. J. S. Clark,) more than one month after the adjournment of the Convention, not correcting proofs of plates, but writing or rewriting the report of the proceedings. We hope the Convention will learn wisdom by past experience, (most especially when they count the cost, pecuniary and otherwise,) and leave this business in future to the Journals, to whom it properly belongs.

Dr. E. Townsend read an interesting paper on Professional Fees, which was ordered to be prineed in pamphlet form, for general distribution, and can be had at 404 Broadway, and of all the Depots.

Dr. Geo. Watt, of Cincinatti, read a valuable paper on the subject of the Action of Pathological Remedies on Inflamed Dentine, which will be published in the Dental Register of the West.

There were many new and useful articles exhibited to the Convention.

Dr. Roberts, of Bond St., N. Y., explained his mode of mounting and exhibited a set of teeth made at his suggestion by this Company, with one long pin to be bent down in lieu of backing. These were mounted on the continuous gum principle, in a handsome and substantial manner, with puffers to replace the absorption.

Specimens of Hard Rubber were exhibited by Drs. Wheat of Philadelphia, Malette of New Haven, and Putnam of New York. Dr. M. also exhibited his new plate punch. A new Ratchet Lathe was exhibited by Dr. W. H. Helme, and met with general approval. Dr. Franklin exhibited his Safety Soldering Lamp.

Dr. Jno. T. Toland, of Cincinatti Dental Depot, exhibited a handsome assortment of Dental Instruments of Sherwood's manufacture.

Dr. Loomis, of Cambridge, exhibited his teeth on porcelain base,—many other articles, such as models of chairs, instruments, teeth, &c. &c. were exhibited, which do not appear in the report. Taking it as a whole this meeting was exceedingly interesting to those that were present, and valuable to the Profession at large, not only on account of the amount of information gained, and the truths and principles developed, but chiefly as an incentive to those who were and were not there, to come forward and contribute a mite for the advancement of a Science that is taking rapid strides to a position that will make lt second to none. CROWELL.

PHILADELPHIA COLLEGE OF DENNISTRY.

We have received the following notice of the Fifth Annual Course of the Philadelphia College of Dentistry.

"The Corporators of Philadelpdia College of Dentistry respectfully inform the Dental Profession, that the Fifth Annual Course of Lectures in this flourishing Institution will begin on the first Monday in November next,

"The regular announcement which will shortly be published, will present several additional features and contain the names of the Faculty, which the corporators have every reason to believe will meet with the entire approval of the Profession.

CHAS. A. DU BOUCHET, M. D., D. D. S., Sec'y.

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From the well known character of the gentlemen comprising the board of Corporators, we feel assured that the Faculty selected by them will combine all the essential elements to impart a thorough Dental Education. They feel sanguine that the wholesale resignation of the late Faculty will not seriously embarass them, or affect the prosperity of the College.

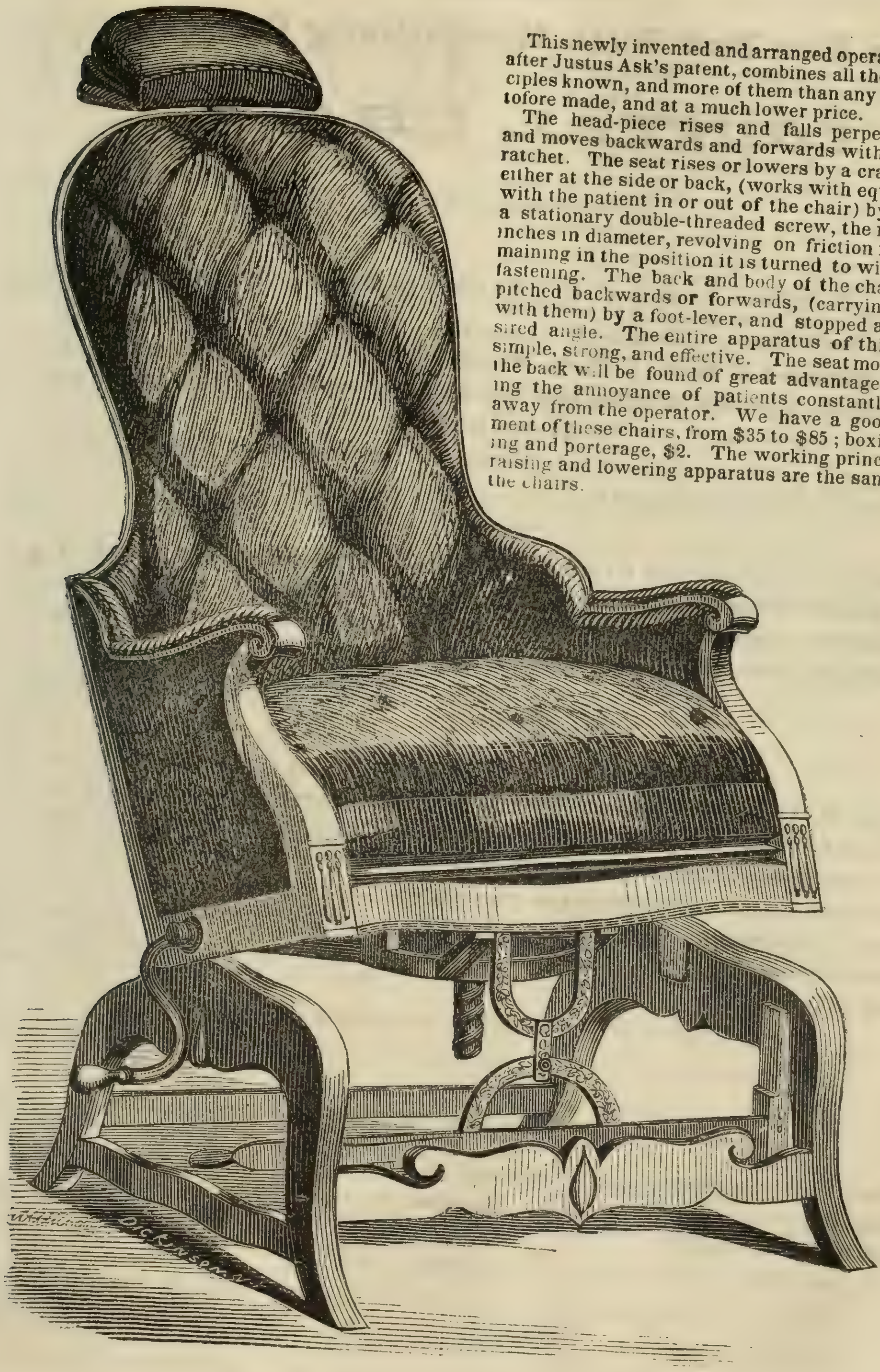
CROWELL.

New York Teeth Manufacturing Company's

CATALOGUE AND PRICE CURRENT.

This newly invented and arranged operating chair, after Justus Ask's patent, combines all the best principles known, and more of them than any chair heretofore made, and at a much lower price.

The head-piece rises and falls perpendicularly, and moves backwards and forwards with a circular ratchet. The seat rises or lowers by a crank, placed either at the side or back, (works with equal facility with the patient in or out of the chair) by means of a stationary double-threaded screw, the nut, seven inches in diameter, revolving on friction rollers, remaining in the position it is turned to without any fastening. The back and body of the chair can be pitched backwards or forwards, (carrying the seat with them) by a foot-lever, and stopped at any desired angle. The entire apparatus of this chair is simple, strong, and effective. The seat moving with the back will be found of great advantage, preventing the annoyance of patients constantly sliding away from the operator. We have a good assortment of these chairs, from $35 to $85 ; boxing, packing and porterage, $2. The working principles and raising and lowering apparatus are the same in all the chairs.


DICKINSON. N.Y.

RECOMMENDATIONS

IN FAVOR OF

The New York Teeth Manufacturing Company's

DENTAL CHAIR.

From Chas. W. Ballard, D.D.S., Editor of the Dental Recorder.

DEAR SIR:—Yours of January 11 is received. I consider the Operating Chair recently purchased of the N. Y. Teeth Manufacturing Co., to be more convenient, and less liable to get out of order, than any Dentists' Operating Chair I have yet seen.

Yours, &c.,

CHAS. W. BALLARD.

Mr. JNO. M. CROWELL, Actuary.

DEAR SIR:—Having used for some months the Chair manufactured by the N. Y. Teeth Manufacturing Co., we take pleasure in recommending it to the Profession. It is admirably adapted to the wants and convenience of the operator. Most Chairs heretofore used have been quite the reverse.

LEFFLER & WILCOX.

From L. G. Bartlett, D.D.S.

TO THE N, Y. TEETH MANUFACTURING CO.:—Gentlemen—In regard to the practicability of the chair I am using, I can recommend it as superior to any Chair that I have used or seen. The facility with which the position of the patient may be changed, and the ease with which you may get around these Chairs, (which is often necessary in plugging the same cavity without removing the hand from the patient) are strong arguments in their favor; and, I doubt not, will be so appreciated by the majority who give them a trial.

I am very truly yours,

L. G. BARTLETT.

From Dr. Wm. H. Wilbor.

DEAR SIR:—In answer to your inquiries about the Chair, I am most happy to say that it operates to a charm. It is altogether the easiest and most convenient Chair I have ever used.

Yours, truly,

WM. H. WILBOR.

THE DENTAL REPORTER.

Vol. 1. FEBRUARY, 1859. No. 4.

PHYSIOLOGICAL OBSERVATIONS ON THE TEETH.

BY PROF. T. E. ST. JOHN.

The Causes of Decay.—One of the greatest evils that "flesh is heir to," is the tendency to decay of the dental organs. Why is it? What induces this premature degeneration in structures that for hardness and density are not surpassed by any in the body? It is a lamentable fact that scarcely one in ten of the human family arrive at the age of maturity, without suffering more or less the tortures of decayed and decaying teeth. It can not, certainly, all be attributed to the faults and excesses of the parent. It can not be supposed that the present generation are so exempt from misdemeanors or transgressions, as to be compelled to suffer the penalties of *hereditary* diseases alone. No, there is a cause; in fact it might be said there are many causes for this most distressing ill of the human subject, that can not be referred to any circumstances existing previous to the birth of the sufferer. I have before noticed the best means calculated to induce and maintain a healthy denture, and it is the object of this paper, to consider the *causes of decay* in the permanent teeth.

These are various, if we are to believe the assertions of different writers upon the subject. Thus, acids, alkalies, climatic influences, the mode of living, the use of sugar, uncleanliness, etc., etc., are presented as a few of the prolific causes of this malady. In noticing the effect of these upon the teeth, I shall endeavor to ascertain how much they are entitled to the censure they have received at the hands of the writers who have spoken of their demerits.

Acids.—Dr. Rossi says, that the change in teeth known as caries, is a *chemical* phenomenon, and is due to a single cause; the action of *one, or several acids*. In examining the composition of the tooth, it is found to contain considerable quantities of alkaline earths, which are capable of combining with various acids, when they are placed under favorable circumstances. All acids are not capable of acting upon the teeth, neither is the effect of those that are injurious, similar in all cases. Acids may be present in the mouth from a number of sources; they may be secreted by the subject, in the saliva and the buccal mucus, especially if the individual be affected with any disease of the salivary glands, or even when suffering from any constitutional malady, the secretions may be so changed in quality, or character, as to become corrosive, or destructive to the teeth, from the excess of acid they may contain. Acids may be introduced into the mouth with the substances taken as food, or may be taken alone, either as drinks or medicines. Particles of the food will remain in contact with the teeth, because of the absence of ordinary efforts of cleanliness, a sufficient length of time for decomposition or putrefaction to take place, which will generate acids in considerable quantities, some of which may be peculiarly active, producing their deleterious effects very rapidly.

It is not to be supposed that a solution of any ordinary acid of the strength in which it is found in the mouth, will materially effect the sound tooth, but if by mechanical violence or other means, the outer coating of enamel becomes removed, it will be observed to act with considerable energy. It is a common remark of all who have any experience in the matter, that when the cavity is once formed, the tooth soon becomes worthless, from the rapid increase of the carious portion.

An examination of the positions of the decayed part would indicate that the decomposition of food and consequent formation of acid was one of the most common causes of caries. It is found on the approximal surface where the material may easily accumulate; it is also found upon the top of the crown in the depressions where the enamel is developed in small quantity.

There are certain conditions of the dental structure, that favor the destructive action of acids, which come in contact with them, viz: the quality of the dental structure, which from the presence of disease in the subject, or from an hereditary taint which may exist, owing to circumstances mentioned in the previous article in the REPORTER, upon the means of *securing* good teeth. The form of the teeth may favor the accumulation of foreign substances, by having a number of large depressions, or being placed in the dental arch in an awkward and irregular manner. Mechanical injuries, such as will result from the use of metalic tooth-picks, the abuse of the teeth by cracking nuts, biting off nails and the like, favor the action of the acids by injuring the enamel and thus allowing them to come in contact with the less protected portions of the tissues.

Thus it will be seen that there are many circumstances existing, which would favor the action of acids upon these organs. Is the presence of this substance injurious? If a tooth be macerated for a short time, in a weak solution of nitric, sulphuric or muriatic acid, it will be found to present the appearances of decay, the tissues will become colored or broken down and disintegrated. About the same result will follow the action of many of the vegetable acids. It is now acknowledged by all who have given any attention to this subject, that acids are the most destructive agents that come in contact with the teeth; and that a large proportion of the caries affecting these organs, is referable directly to acids as the cause.

ALKALIES.—There are some who attribute dental degeneration to the large amount of alkalies that are used in food, at the present day, as saleratus, soda, etc. That deleterious effects upon the health of the individual may arise from the excessive use of these substances, no one will deny, but that they are peculiarly destructive to the teeth, is by no means probable, as may be proven by observation and experiment. The natural condition of the mouth, or of the fluids by which the teeth are surrounded in health, is alkaline, and it can not be supposed that a healthy secretion, normally formed and given off for the use of the animal economy, would have an injurious effect upon those structures with which it is continually in contact. If the tissues of the tooth be macerated for a long time in a strong solution of potash, no very marked effect will follow, certainly none like those which characterize the action of acids. May it not be supposed then, that these substances are not as injurious as many have been induced to believe; and if they have a degenerating effect, it is of a secondary nature, rather than primary; that they affect the dental tissues in common with other structures of the body, by interfering with the general health of the subject, and impairing the vital processes of secretion, assimilation and nutrition. It is true that statistics are presented to show that decayed and decaying teeth have been alarmingly on the increase since the introduction of saleratus as a common article of diet, but do they prove that the use of this substance is the cause of the malady? Is it not mere assumption? Could not statistics be obtained to show that intermittent fever has increased in this country, in as great a proportion since that time, as caries in the dental organs; and yet, who would argue from this alone, that they stood in the relation to each other as cause and effect? Even if the alkalies are injurious to these organs, it is never the case that they are applied in suffcient strength, or for a sufficient length of time, to produce any result whatever, and it is highly probable that under ordinary circumstances, no deleterious consequences follow their use. This is indicated by the chemical composition of the teeth, as well as by observation and experiment.

The Influence of Climate and Mode of Living.—As regards the influence of climate in hastening decay, but little is known, and that is mere hypothesis. It has been argued that persons coming from the old country generally have good teeth, but very soon after their arrival in this country, the teeth begin to decay. Is this not really owing to the manner of living rather than the climate? The aborigines of this country universally have good teeth. They live more in accordance with the laws of health than do the amalgamated mass that forms the

American people. We are continually striving to ape the vices, fashions and follies of the old world, without paying heed to their virtues, and as a consequence we enjoy the reward. The constitution is broken, the vital forces impaired, and in common with the other portions of the body, the dental organs are undergoing a process of degeneration, which will, ere long, leave its mark as well upon the intellectual faculties of the sufferer, as upon his physical organization.

SUGAR.—It has very frequently been asserted that the free use of sugar, tended to premature decay of the teeth, but at present this is rendered untenable, by the known action and influence of this substance; it being rather in an opposite direction tending to prevent instead of promoting degeneration of osseous structure. This is acknowledged by all physiologists and arguments are unnecessary. It is the principal ingredient in the food of the individual for a considerable period of his early existence, at a time, too, when these dental organs are being formed.

UNCLEANLINESS.—This is a matter to which it is the duty of every dentist and physician to call the special attention of his patients and friends. It is, indeed, the cause of all causes of premature decay. It is by uncleanliness that deleterious and obnoxious substances are allowed to remain in contact with the dental tissues, contaminating not only the teeth, but the health and life of the subject, by the foul odors that are being constantly emitted as the result of their decomposition and decay.

Persons may occasionally be found, who, for a number of years have paid no regard to cleanliness of the organs, and yet, never suffered from decaying teeth; but these are the exceptions, and not the rule, they can not be regarded as arguments in favor of uncleanliness.

In the bar-room of a small public house, in a country town, was once congregated a company of young men, enjoying the passing hours over a glass of the best "Bourbon," when an old man well known to them all as "Old Porter," joined them. "Old Porter" had for many years been the sexton of the village graveyard, and withal was an inveterate drinker. As he came in, one of the company proposed to drink the health of the old man, remarking that "Bourbon could do no one any harm, for Old Porter had drank it all his life and was then a hale and hearty old man." The old man turned abruptly to him, and requested that he walk to the churchyard. When there, the old man said, "Harry, your jesting remark brought back to my memory many a bitter thought; look there, and there," pointing to a number of graves, "I started in life with a number of young men whose prospects were as bright as yours—we drank together, enjoyed our gatherings over the social glass, as merrily as you do now; but they all are dead, and each fills a drunkard's

grave. I, alone, am left. My case is not the rule, but the exception." But to the subject—we can not suppose that because one individual has reached an adult age, with perfect teeth, although he has not given any attention to the cleanliness of those organs, that others may do the same. But I have already made this article too long. What are the remedies for this degeneration? I have but one or two to present: the first, and most important is cleanliness, entire and absolute cleanliness of the whole mouth, and especially thorough washing after each meal. By this means any particles of vegetable or animal matter that may have lodged upon or around the teeth, will be removed, and their injurious effects prevented.

It will be seen by reference to the adjoining cut, that a space of greater or less dimensions exist between the teeth, into which the noxious material may easily lodge. The indentations upon the crown are not so readily seen in this representation, but any one can obtain a view of them by examining the living specimen which he carries with him. The accompaning *original* engraving is taken from a beautiful specimen, belonging to Mr. Toland, of this city; it represents, very accurately, the nervous filaments and vessels passing to the teeth, both of the superior and inferior maxilla. Reader, stop and examine it carefully. You will observe that each tooth has *five* sides, three of which may be reached with the brush—the other two, (the approximal surfaces,) must be cleansed by means of a slip of silk drawn between the teeth.

If there be a cavity, however small, have it filled; as long as it remains, it provides a resting place for a quantity of decomposing matter, which increases the decay, and taints the breath with foul and disagreeable odors.

TREATMENT OF DENTAL PULP.

Mr. Editor:—If you think the following observations upon the treatment of the dental pulp, worthy a place in your very excellent "Reporter," you can publish them; if not, you are at liberty to dispose of them as you see proper.

Whether the dental pulp, after exposure, can be preserved in a normal state, depends not only upon *its* condition of health, but also, very much upon the *bodily* condition of the patient. If the patient possesses a strumous diathesis, or is suffering with dyspepsia, or any intestinal derangement, the chances of success are very uncertain.

When I find the nerve and its investing membrane exposed, but in a healthy condition, and the dental arch of the patient fully developed, the gums healthy, and no predisposition to arterial excitement, I have no fears in regard to its successful treatment.

For a number of years it has been my practice to treat the exposed nerve, preparatory to filling, with a mixture of tannin and creosote. Latterly, I have been using glycerine in place of the creosote, and in many cases deem it preferable. In introducing the filling, the foil should be so packed, as not to press too hard immediately *over* the exposed nerve, (the pressure is to be feared;) at the same time the filling should be made solid, and *thoroughly* compact around its edges, where it joins the parietes of the cavity. In many cases where the dentine is very sensative, and will not admit of proper excavation, I use temporary fillings, which, after remaining in six months, I have removed, and invariably found that nature had been making efforts to protect herself against the encroachments of the disease, by consolidating the dental tubuli. I have very little faith in indiscriminate "nerve capping," although have used a horn cap in some few cases, where it was thought necessary.

But when the nerve is inflamed, and *these other conditions* unfavorable, I find it utterly futile to rely upon preservative treatment; but always destroy it, either with an instrument or an escharotic.

The former method is always preferable; but when the tooth and other circumstances will not admit of my using an instrument, I then use the following escharotic:

℞.—Morph. Sulph. xx grs.;
Arsen. Acid, xxx grs.;
Ole. Caryophyl., q. s., misce.

The oil of cloves is far more preferable than creosote, being less unpleasant and more agreeable to the olfactories of the patient. A small bit of this mixture of the size of a pin's head should be applied *in contact* with the exposed nerve, and the cavity filled with wax, and let remain for twenty-four hours. One application is generally sufficient. A proper opening should now be made into the cavity and all the decayed and dead pulp removed. Should there still be a tenderness in the fang or fangs, it is best to fill the cavity with cotton, moistened with spirits of camphor, and let the tooth rest for a few days. By this time the little remaining vitality of the nerve filaments will also be destroyed, when the balance of the nerve can be removed down to the apex of the root. After applying a solution of tannin in glycerine, and thoroughly washing, the roots and cavity are prepared for inserting the filling.

Should the operator neglect to remove all the pulp, but merely *wall it in* by the filling, it would be very apt to lead to inflammation of the alveolo-dental periosteum, terminating in alveolar abscess, and probably requiring the extraction of the tooth.

In the treatment of the dental pulp, like in all other operations in operative dentistry, it requires of the intelligent dentist, more than a mere *routine* system of therapeutics—he must be " eclectic," exercise his judgment, and use such remedies and means as the nature of the case demands.

Middletown, Md., Dec., 1858. J. P. H. B.

* * *

Mr. Editor:—Having kindly solicited me to contribute a communication for the next number of the *Dental Reporter*, I herewith cheerfully comply with your request. Deeming the following cases not entirely void of interest, I transmitted them in *part* to the *Dental News Letter*, (if my memory be not at fault,) in the early part of 1855. But unfortunately quite a number of errors crept into the publication. The fault, however, in all probability, was my own, as I carelessly wrote the article in pencil.

If you coincide with me in regard to their worth, then give them publicity; if not, consign them to the flames. At some subsequent period, you may hear from me again, relative to some inventions, improvements, etc., which I have effected, pertaining to the dental laboratory.

For the Dental Reporter.

SINGULAR PHENOMENA—REPRODUCTION OF THE ENAMEL, &c., &c.

Throughout my researches in the pages of dental history, I have met with nothing that resembles the following curious phenomena. And I trust their apparent incompatibility with received views, will *not* stand as a barrier to the investigation. Whether they will prove to be of practical value, remains yet to be ascertained. But they at least are interesting as physiological facts, and may be the means, not only of casting much light upon the subject, but add also to the literature of Dental Phenomenology. Freely do I confess my inability to assign the causes of these strange freaks of Nature, and therefore submit them to the dental profession, without comment.

Case 1. Philadelphia, March 12, 1855. Miss S. S., a lady of my acquaintance, aged about twenty years, of sanguine temperament, had, early in life, used a great deal of medicine, the result of which was, the entire destruction of the enamel of all her permanent teeth, while upon the bone or ivory, not the slightest traces of its ravages were visible.

And strange as it may appear, the enamel is again for several years past, being gradually deposited upon them; some of which are now entirely coated over, while others are but half or two-thirds. The formation of this enamel commenced at the *necks* of the teeth, and not at their *cutting* edges, as is usually the case. It is very beautiful in quality, exceedingly white, and of unusual thickness.*

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* Some year and a half after the above date, I again visited the city of my nativity—saw my friend Miss S. S., and found the *deposit* still slowly, but gradually progressing.

CASE 2. Miss H. L. R. of W——t, New Jersey, aged seventeen, of a healthy appearance, consulted me July 20th, 1856, and presented the anomaly of having no superior lateral incisors. Yet in other respects her teeth were entire and well formed. On inquiry, I ascertained that her grand-mother, previous to marriage, had lost both of her lateral incisors; and that neither the father of H. nor herself have ever had them, either deciduous or permanent.

WM. W. MORGAN.

Somerset, Jan. 3d, 1859.

DOVER, DEL., Nov. 3d, 1858.

DR. JNO. T. TOLAND :—Having promised you an article for your *Reporter*, I now furnish you, upon a subject entirely new.

For some time past I have been using the galvanic battery for extracting the "*nerves of teeth without pain*," having originated with myself. The attachment is made in the same way as that in extracting teeth. One pole being applied to the excavator or broach, the other to the patient's hand, and of strength sufficient not to feel too unpleasant, and you can cut away *without the least pain*, and extract the whole of it in a few minutes, without the previous use of arsenic or any other escharotic. In this manner of proceeding no inflammation is set up, to cause suppuration or ulceration at the root. The nerve is cut off like any other part, and after done bleeding, the use of any astringent, (pure Tannin is best) the parts heal, and no danger is apprehended as with arsenic. Thousands of teeth may be saved in this way, that will defy every other method, and that *without pain*. No fear need be entertained of it; you can cut in on the nerve, and no effort will be made by the patient to resist you. The only unpleasantness is that of the battery, which should not be too strong.

My object is to give it to the profession, and if successful, all I will ask, is, to be rewarded by small compensation, instead of securing it by *Patent*.

You will please give this an insertion in your *Reporter*, if not too late, or give, at least, its substance. If too late, report it to the profession verbally from your Depot, and let me hear from it. As to its success no fears are entertained by me, for I know it will do; nor need the practitioner fear to make use of it.

I am the sole originator, and the world is welcome to use it. No patent binds it to any one. Be certain in every case, that all the nerve is gone from the tooth and roots, and I'll guarantee success in every case.

Excuse my haste and oblige

JOHN G. A. BONWILL.

* * *

DESTROYING THE NERVE AND FANG FILLING.

BY JOSEPH MANSFIELD, OF NILES, MICH.

Read before the Michigan State Dental Society, at its 4th Annual Meeting, held in Detroit, Jan. 11th, 1859.

I always destroy the nerve when exposed. I have tried capping; it is with but poor success. I lose one out of four in capping.

Take arsenic, one part, morphine or tannin, one part, make it into a thin paste with creosote, then take a piece of small cotton twine, cut it into very short pieces, put it in your paste, cork it up tight and let it remain until it becomes well steeped in the paste; take out your cork, let it evaporate until it becomes nearly dry before using. One piece of the twine is sufficient to destroy the nerve. (I do this to prevent getting it on the gum, and it is much easier to get into the cavity.) I direct my patients to be sure and come the next morning, and have it taken out—(if at a distance, to take it out themselves.) If the patient is young, from 12 to 16, don't let it remain over 8 or 10 hours. I now partially cleanse the cavity. If not too sensitive, I prick the nerve so as to cause it to bleed, (I think this quite essential,) then I put in a small pledget of cotton saturated with creosote, let it remain from 2 to 4 days, and repeat it from time to time until the soreness has left, then clean the nerve and crown cavity thoroughly. I usually take a small drill and drill the fang as far as I can, then introduce a small piece of cotton saturated with creosote into the fang, stop the cavity with wax or cotton, let it remain from 2 to 3 days, if no soreness, then fill the fang and crown cavity. If there is soreness repeat the creosote.

I have on my note book 17 teeth treated in this way from the 21st of January to the last of February, which I have seen or heard from within a few weeks, and are doing well and perfectly satisfactory to the patient.

I filled 10 teeth during the same time, where the nerve was dead; some discharged through the fang and a part through the gum, which are all doing well. These I treated with caustic, chloride of zinc, and creosote. In the first place I take a small piece of caustic, crowd it as far as possible into the fang, stop the cavity with cotton; if the discharge is through the gum, I take a stout gum lancet and cut through the gum to the fang of the tooth; at the orifice of the discharge put in a piece of caustic. I order my patient to come the next day, then partially clean the fang and crown cavity; after this I use creosote mostly, sometimes cloride zinc. Treat in this way from two to four weeks, as the case may require, then introduce cotton saturated with strong creosote far up into the fang. Then fill with temporary filling, (I have used the New York Tooth Manufacturing-Co's polishing sticks, made of gutta percha and silex,) let it re main in from two to six weeks, then fill the fang. If you think filling the crown at the same time will be likely to produce inflammation, defer it for a few days.

I do not lose one front or bicuspids tooth in twenty with this treatment, in destroying nerve or where it has died from exposure.

You can not treat molar teeth with the same success from the fact that it is more difficult to thoroughly cleanse and fill the fangs.

ELECTRICAL ANÆSTHESIA.

Buffalo, N. Y., Dec. 15, 1858.

John T. Toland,—

I sent you a letter a few days ago, requesting you to withdraw my advertisement for the present. And now, I am on this subject, it reminds me that there is a strong prejudice in the Dental Profession averse to patents, which is very absurd until the Profession are pre pared to pay a man for years of toil and outlay. Bah! I have no patience with such twaddle. Just see how the Profession have sustained me. I claim to be the original discoverer of the Electrical Anæsthesia, and applied for a patent, intending to charge Dentists $20 for office rights, and *give* the *surgical* part of it to the world. Another person, it seems, by *some means*, obtained a patent ahead of me. I considered, (by advice of counsel,) that it would be best to withdraw my claim. I did so, as I was not prepared to litigate; it is proved that my process is far superior to the patent, and *yet, although* I have advertised in two Dental Periodicals to sell a Book of Instructions of the *best mode known* of using Electricity in Dental operations, *for One Dollar*, I have *not sold Books enough to pay for the advertisements.* I should like to have some person devise a process by which the discoverer of a new fact in science appertaining to Dental practice, (which *is* really *useful* and *new*,) may have some prospect of being paid a moderate compensation for his outlay of time and money. Honor or Fame is poor substitute for Bread and Fuel, at this season of the year at any rate.

Allow me to suggest, also, that inventors as a class are invariably poor, and such being the case, fame is a poor substitute for what they ought to have.

It appears to me the owner of the patent has fared worse than I have. One reason I suppose is the process does not work well. My advertising has brought a host of letters from all parts, full of frivolous questions, the most of them aiming to obtain the mode of operating by letter, and thereby save the dollar charged for the pamphlet, many of these minus a return stamp. I am sorry to say it, but it really seems to me the Profession will pay for anything that is new and useful if they can't help it. You asked me for a short dissertation on Electrical Anæsthesia! here it is—you may publish it if you please.

I am, sir, with great respect, your friend,

W. G. Oliver.

FINISHING, FILLINGS, ETC.

BY A. F. ENNIS, PLYMOUTH, N. C.

Editor of Reporter—*Dear Sir:*—I send you a few ideas important to every member of our profession to observe, if you find them worthy of insertion, they are at your disposal.

The necessity of great care in completing the process of filling after consolidating a plug, all will admit.

There are many good operators who are neglectful in this most important and (as I conceive) indispensable duty, of thoroughly burnishing fillings, until they present a high polish and luster sufficient to reflect your image. The most successful operators in dental surgery in America, among whom I will mention, Professor C. A. Harris, of the Baltimore College of Dental Surgery; the lamented Dr. John Harris, deceased; Dr. Badger, of Nashville, Tenn., and a host of others were particular in regard to this item, and, indeed, I esteem the proper finish a sine qua non, upon which the future success depends. What would you think of a cabinet maker who would offer to sell you a roughly dressed piece of mahogany furniture. The furniture may be well put together, but lacking the finish—it tells unfavorably upon the workman. Likewise, a filling may be well put into the cavity and properly consolidated, but without the finishing stroke, characteristic of the accomplished artizan, the eye is not pleased. I have often observed a negligence among some operators in this particular, and, therefore, I wish to jog the memory of members of the profession to the importance of doing what they do, in the most thorough manner. An half hour can not be better spent than to condense, consolidate and burnish, until a high finish is obtained on a filling—it will amply repay the operator, and speak volumes toward the adornment of his path in life. The same care is essential in completing other operations; for instance, after separating, use a worn-out file or emery paper and polish. These, though small items, are indispensable steps to success. Particles of food are prevented from lodging on the surface of the enamel or dentine, and the tooth is secured against further decay, when well filled, provided the patient observes proper care in keeping the surface clean, hence, dentists should direct their patients to use floss-silk to cleanse the teeth.

The dentist can not be too particular after removing salivary calculus, to apply crocus, pummice-stone or other polishing powder, to leave a high polish. This course removes all traces of scratches, roughness, or particles of tartar that adhere to the enamel, and causes a highly polished, natural glazed surface which does not favor the accumulation of calcarious deposits. If the patient will follow the advice of his dentist, in observing the rules of dental hygiene and therapeutics, he will not fail to enjoy the luxury of a good Dental Organism.

Acids should, under no circumstances, be used about the natural organs, in our practice.

* * *

The following lecture was delivered Dec. 23, in the Ohio Dental College, Cincinnati, by Albany Packham, D. M. C. (at the hour which should have been occupied by one of the Faculty, but who failed to "come to time,") wherein he faithfully portrayed the several peculiarities of the profession: for instance, the round, soft and *repeating* style of Chapman; the excited, quick, railroad speed of Taft; the clear, smooth, plain, yet forcible manner of Watt; the grand and sure originality of Richardson; the loud tone, and gesticulating action of Smith; the dignified and stately grandeur of Taylor.

GENTLEMEN:—You have requested me to deliver before you a lecture upon Mrs. Partington, but having studied the *classical* languages in preference to my own, I am afaid you will not understand *my* English, so as to appreciate my lecture, if I deliver it in that language; still, if you will overlook my imperfections of speech, I will proceed. (Go on! Go on!)

Gentlemen, go-a-head it is, then—I am very glad to see so many representatives of the Partington family present—I will, therefore, make a few brief remarks about myself before I proceed with the Old Lady. In the first place, I am like unto a rolling stone which has gathered no moss, for I have been rolling from place to place, till I have nary-a-moss sticking to me. Let me then, impress upon your minds, the absolute necessity of locating yourself in some likely spot, where human pearls are scarce, and stay there if you want to gather the moss. I started in life with as fair a prospect of success as any one of you now present, but I wandered from place to place, until I have traveled upwards of six thousand miles, and spent upwards of three thousand dollars, then I could not roll my stones any farther. Gentlemen, when you are once settled and doing well, yet think you can do better by *shift*ing your shingle, don't do it! but think of me! and my word for it, you will stay—that is, if your neighbors will let you. (Cheers.)

Gentlemen, This, I believe, is the only instance when an honor like the present, has been conferred on a janitor, lecturing (by the request of, and before the class) since the time when Aristotle, Esculapius, and the ancient faculty used to lecture before the students in the shady groves of Athens, Rome and Greece, for the janitor's duty at that time was to sweep up the fallen leaves, for the students to sit upon, and also to keep the nurse girls away. This, I say, is an honor never before conferred upon a janitor, and as such I thank you, not in the common slang of the day, (from the bottom of my heart,) for I believe my heart knows nothing about it, but I thank you, gentlemen, from the center of my brain. (Cheers.)

There is something about me that pleases you, else why this kind notice, which each of you have always shown me, others also, have been struck by my classical appearance, for during last summer, while my friend, Dr. Ruth, there on my right, had charge of the Infirmary, a lady came *in* to have a tooth *out*—she was placed in the operating chair—she was very nervous—for seven times did he take the forceps and approach her capacious aperture, containing the masticating machinery, and seven times did she close it with a sound like that of a snapping-turtle, suddenly she caught a glimpse of your humble servant, her eyes brightened up instantly, at my prepossessing appearance, and pointing at me, said if the *professor* there will hold me *in* I will have it *out*. I did as the lady requested, and the doctor extracted a three legged stool, which I suppose a cow had previously kicked there, when she was milking. At another time, that very nice, ancient but ignorant old lady, Mrs. Partington, came to the College, with her young hopeful son Ike, and wanted to know if I was not the professor, over all the Faculties. I did not deny the soft impeachment, but nodded my head in the affirmative—she said, that seeing our printed circulars scattered all over creation, wherein it stated that all those applying for work at the Infirmary, would be treated with all the kindness and respect that they would receive in a private office. I said certainly, madam, it's so! She then wanted me to *give* Ike a job of work, and five dollars per week. I explained to her the mistake she was under, by stating we expected patients to give us a job of dentistry-work. She then wished to know if Ike was disqualified to learn dysentery. I told her I could soon tell her, by examining him in arithmetic and geography. She told Ike to stand up, put his hands behind him, and answer me like a man! I asked him what addition meant? Ike said applying the battery in pulling a *fang*, in addition to the screw forceps, (good!) What does multiplication mean? He promptly replied, multiplying the pain in toothache, by the application of Dr. Branch's Patent Salt and Ice Bag, (good again.) What is division? He replied without hesitation, dividing the jaw, while extracting a tooth, (good again.) I asked him only one question in geography, and that was how far he expected his practice to extend? He said he would not be content unless his practice extended from the frozen ice-burghs of the North Pole to the warm-hearted sunny south, and from the eastern land of nasal-twangs to the other side of the setting sum. I turned to the anxious mother and said, Ike's examination proved him disqualified to study dysentery, and as she was very anxious to see him try his hand. I told him to commence operations, (she whispered in my ear that Ike had one operation that morning,) by extracting a canine tooth, he looked in his Latin for the word *canine*, then darted into the street after a dog, returned and placed it in the operating chair, seized a forcep, asked the poor brute if he would have the battery? He barked out, no! as plain as bark could. He then asked it to have Dr. Branch's Patent Ice and Salt Bag? (Applause.) A bark and a growl, so savage was the answer, that Ike dropped the forceps in alarm, and the brute escaped. I informed him it was not dog teeth I meant when I said canine. He looked at me with his nose turned up, in derision of my ignorance, and muttered something about my knowing nothing about Latin. I handed him a skull and told him to extract the cus-pidatis. Poor Mrs. Partington, with tears in her eyes, exclaimed in a rage, (her voice hissing like a hot casting, thrown into the water,) Ike shan't *detract*, nor *cuss-his-daddy*, for he was a good daddy to him, and died when he was only two months old—I mean Ike was two months old, and not his daddy—and before I could explain, she put up her spectacles, and dragged her young hopeful out of the College, in disgust with dentists in general, and dysentery in particular. (Cheers.)

Gentlemen, one of the junior members of the class, told me in confidence and friendship, that Mrs. Partington was really dead, and not to make myself ridiculous by saying she came into the Infirmary. Gentlemen, there are a few more left, and a great many son Ikes, and that young man just mentioned is one, and unless he greatly improves, he will do worse than his name-sake did with his dog patient. Why, every town in the world has a Mrs. Partington in their midst, any one of you (if you except that young man, for he did not know his own mother) can always distinguish the old lady from the rest of the human family, by these few peculiarities—she invariably confounds verbs, moods and tenses, calling things by the wrong names, and giving the most absurd pronunciations to words—she is a kind, good, motherly old soul, her hand in her pocket at the first sigh of distress, either real or imaginary, it's all the same to her, (the reason there are so many professional beggars, is because there are so many Mrs. Partingtons,) she always wears spectacles, and when excited, loses them sure, she then commences searching for them in her bureau drawers, inside of her Bible, in her work basket, in her pocket, and even in her button bag, at last finds them above her nose, but *knows* nothing about them, until told of the circumstance. Mrs. P. never was guilty of giving her son a clean shirt to put *on*, having a button *off*, neither does she give him his stockings with a hole in them, except the one he *put his foot into*, (nothing personal, gentlemen, although we all know some of you had a *hand in it* the other day,) she is also very firm and headstrong in her belief of whatever she has set her mind upon, for she still insists that her son Ike was subject to the *inflatation* of the *growels* every time he went to see the *inflammation* of the balloon, and when he was undergoing the painful operation of cutting his *cotemporary* teeth, he had fits and *revolutions*. Such then is Mrs. Partington, and with all her faults, I love her still. (Applause.)

Gentlemen, from this time forth, I shall endeavor so to shape my future conduct, that each and every one of you, when far away, will be proud to acknowledge me among your correspondents, and own up to your friends, that Albany Packham was once your Demonstrator of MANUAL COMBUSTION, IN THE OHIO DENTAL COLLEGE. Again, gentlemen, I thank you from the center of my brain, for your kind attention and stunning applause.

CONTINUOUS GUM WORK.

BY DR. W. B. ROBERTS.

To the Editors of the Register.—*Gentlemen:*—By your last number I perceive that you hold me to the promise I rashly made at the Fourth Annual American Dental Convention, of furnishing an account of the method of making continuous gum work. The task I find is a more formidable one than I anticipated, and I regret it has not fallen to one more familiar with the use of the pen, and more competent than myself to do justice to a subject of so much importance. Why it has not before this been fully treated by those who have written so ably upon other branches of mechanical dentistry, it is difficult to say, unless it be that a knowledge of the art is still limited to a few, or that *its being patented* stands in the way of a favorable notice. However that may be, the admitted beauty and durability of the work, and its being generally adopted by the best practitioners, render a knowledge of the method of making it, desirable. I shall attempt but a plain practical account of it, such as one may be supposed to offer to an actual pupil entering upon its study, after having made himself conversant with the usual practice in preparing and fitting gold or other metallic plates.

We will suppose the work before us is the preparation of two upper sets. In following out the different processes, a few remarks may be introduced, suggesting methods of avoiding difficulties most likely to be met with.

Impressions.—When the plaster, mixed in the usual way, is nearly ready to set, you should fill the cup, raising the center a little higer than the edges. Introduce it gently into the mouth of the patient, after placing a napkin under the chin, and then carefully work and press the cup up to the roof of the mouth. The head of the patient should be inclined forward, so that the saliva may flow out upon the napkin. By neglect of these precautions I have known patients in the hands of inexperienced operators to suffer severely from choking. The cup should be held firmly in its place, not allowing it to be disturbed in the slightest degree, until it is ready to be taken out. The process is to be repeated for the two above-mentioned cases. Gutta percha in partial cases may be used to great advantage for taking impressions.

Plates.—Leaving each one to his own method of making plaster casts, the next process is the preparation of the dies and plates, and this presents some peculiarities which distinguish it from the routine pursued in making gold plates. In every piece of platinum work the edge of the plate should be turned over, in order to give a smooth finish to the edge, and under which the gum and body flows, adding much strength to the entire piece. The body and gum, when laid over the surface of the plate, should not quite reach the posterior edge, but about a quarter of an inch of the metal should be left exposed; the rest of the plate is to be covered with the gum work, which should slope off smoothly to the platinum, so as not to present any roughness to the tongue, and the surface of it is to be polished, to imitate the appearance of the natural rugæ of the palatial arch. The sloping edge may be obtained by soldering a three-sided wire across the plate, near to its edge; or by a method which I find preferable for its greater neatness, and the increased stiffness it gives to the plate. This is in building upon the plaster model (taken from the impression) a little triangular ridge in the same position the wire would occupy, extending in crescent form from the back edge of one wisdom-tooth to that of the other—the curve being forward. The ridge should slope very gradnally toward the back edge of the model, and the rise, when transferred to the plate, will hardly be perceptible to the tongue. The front side of the ridge serves as a shoulder for building the gum work against. I have sometimes carried the gum out to the edge of the plate; but this requires a very accurate fit. This result may also be obtained nicely by doubling the posterior edge about one-fourth of an inch in width, and finishing against the edge of the piece put across. We will suppose the first two methods (the wire and the triangular ridge) to have been adopted for obtaining the ridge upon the plates, one for each of the two upper sets. The mouth, when the impression is taken, should be carefully examined, to note the position of the muscles, and to determine the proper depth of the plate. You are then to take a little beeswax or plaster, and build a rim around the edges of the plaster models as high as you wish the plates to come, thus forming a shoulder, which, when the two parts of the die are closed over the plate, will form an angle of about (50) fifty degrees, which may be bent down, as will be hereafter described. The dies may be prepared of zinc or other metal, or any alloy you are accustomed to employ for this purpose—some precautions are to be taken in striking the plates, which are not required in swaging those of gold or other materials that are not to be afterward exposed to high temperature. Being cut by the pattern leaving it to project about one-eighth or one-sixteenth of an inch upon the shoulder, for a rim, the plate is to be laid upon the metallic die and gradually worked down with a wooden or horn hammer to a tolerably close fit, before attempting to swage it. It may be split in front if necessary, and also at the heels, and afterward restored by soldering the same, as is practiced with gold plates; but this is better omitted in cases that can be swaged whole. Great care is required to avoid bursting or tearing the platinum in the swaging. Annealing should be often repeated; and previous to each annealing, the plate should be cleaned with nitric acid in order to remove all particles of zinc and foreign substances that may be taken up and adhere to the platinum. These, if allowed to remain, would be incorporated with the platinum by the action of the heat in annealing and baking, which would seriously injure it. The swaging should be continued with hard blows, with a heavy hammer or drop, forcing the platinum into every depression in the dies; and the greatest care should be taken in completing the work, that the surface is smoothly finished, showing no dents or scratches. We will suppose the two plates we have commenced to come out in different conditions—the one we intend to put the wire across to finish the gum work, is disfigured upon the surface with dents and imperfections, resulting from incautious swaging, and with a hole in it, caused by being annealed without thorough cleansing from the particles of zinc or other metals it came in contact with, which made it extremely brittle. Zinc or lead is particularly destructive to platinum when the metals are heated together. The other plate, we suppose, is in good order, with the exception of the splits purposely made before swaging, and which are now to be closed up by soldering with pure gold. The hole in the other is also to be mended by introducing over it, on the palatial side of the plate, a piece of platinum, and soldering this with gold. Soldering at the same time across at the point heretofore described.

Articulation.—You will now proceed to fit the plate in the mouth of the patient, noticing particularly whether it rocks or loses its adherence when pressed upon one side or in front. If satisfactory, next place upon the plate a ridge of wax, which will serve to show the length and position the teeth are to occupy, and serve as a temporary fastening while arranging them. The best swaged of the two plates we will suppose now makes the best fit, and being provided with wax, is placed in the mouth of the patient, who is directed to shut the mouth in the natural way, and cause an impression of the under teeth to be made in the wax above. A vertical line is then to be drawn in the wax in front, marking the division between the two central incisors. We have now a perfect impression of this one; but no provision for determining the proper length to give the teeth. For this the upper lip should be allowed to assume a natural, easy position, and so much of the wax should then be cut off, as to leave about one sixteenth of an inch in the place of the central incisors visible below the edge of the lip; towards the bicuspids the length should slightly diminish. The other plate, when furnished with the wax, we suppose is placed in the mouth of a person who has, for years, enjoyed the use of only the front teeth—when such an one is directed to close the mouth, it will be found almost impossible to make two successive impressions of the lower jaw in the wax coincide; the patient does not bite twice in the same place. Close observation and the greatest care, will, therefore, be required in determining the proper place for the teeth, in order to obtain a natural expression. The face, moreover, in this instance, is sunken, and requires filling out to restore its original contour. For this purpose wax must be added whenever it is needed to form prominences, and depressions must be moulded in it where these are natural, as for instance, directly in front, where a fulness would give the appearance of a swollen lip. For the prominences or cheek restorers, designed to fill out the sides of the face, the projection of wax must not extend further towards the front of the mouth than the line between the second bicuspid and the second molar, if brought beyond this point, they distort the features, and show; when the mouth is opened, the shape and dimensions of the prominences should be obtained by repeated trials, observing carefully the effect of every alteration, as the patient is purposely kept in good humor, and without exciting suspicion of the object, induced to laugh and give to the features their changes of expression. The dentist should watch his patient as closely as an artist his sitter, in painting a portrait from life. And, here let me say, that this, that I call *artistic dentistry*, has been, and still is, grossly neglected; for, how often do we see persons in whose faces we discover a delapida-condition of the entire outline of the features. This can all be attributed to want of knowledge, or neglect on the part of their dentist. After having ascertained the necessary length and projection to be given to the cheeks and teeth, place the wax and plate in cold water, to render it as hard as possible (as we will suppose this to be a set to match an artificial under set) we will then place wax upon the under plate, the length as near as possible that we wish the under teeth, soften it, and placing both plates and wax in the mouth, let the patient gently close the month until the upper wax presses into the under sufficiently to allow the lips to close or touch in a natural and easy manner. This will show the length required for the under teeth. Let the patient open and shut the mouth, merely touching the wax together—let it be repeated several times, opening the mouth as wide as possible, and bringing the jaws suddenly together, so that there may be no mistake. When right, let the gums be pressed together so as to hold the whole mass firmly without disturbing the wax; then, with three pins or pivots of wood, fasten them together, running one near each corner of the mouth, through the edge of the under wax in the upper, the other pin into the edge of the upper, running down into the under wax at a point midway between the other two pins. Then remove the whole mass at once, place it on the articulating frame and run in the plaster. After it hardens remove the upper plate, place it upon a piece of paper, and draw a pencil mark around it, representing the projection the wax is intended to give the teeth and cheeks. Turn it over and draw another line. With these two lines or drawings as a guide, the teeth, body and gums may be placed as accurately upon the plate, as the wax had been, (which it will be necessary to remove by the process of imbedding, lining and soldering,) without fitting or trying it in the patient's mouth, during the process of making the set. Yet, it is always desirable to introduce them into the mouth once or twice, for instance, after the teeth are soldered fast—and again when the first coating of body has been applied. This prevents all possibility of mistake.

Arranging Teeth.—The next operation is embedding the artificial teeth in the ridge of wax prepared to receive them. This point requires especial care, and also some artistic taste; for, a slight variation in the position of a tooth may give a decided and unfortunate change of expression to the whole set. You will begin by cutting a bed for a central incisor, on one side of the central line marked in the wax, as deep as the thickness of the tooth, and laying this in its place, where it will be held by the wax. One tooth after another is to be thus placed, till the set is complete. Now, I will take the piece in my hand, place my thumb across the teeth to represent the lip, and observe the effect. The central line is right, the lateral incisors are even; but they stand too formal and stiff. I move them up a little to make them shorter than the centrals and incline them slightly, so that one corner of each nearly touches the adjoining central incisor: this gives a more natural expression. I move the canine teeth also, to make them a little more prominent. Attention must now be given to avoid in the general arrangement a defect very common in sets of artificial teeth, viz: too great exposure of the back teeth, giving the appearance when the mouth is opened, of its being filled with teeth? This comes of the curve of the piece being carried too far back, when it should be limited merely to the space occupied by the six front teeth. The bicuspids and molars must therefore be pushed in, the first bicuspid being nearly hidden behind the canine, and those beyond extending back in a straight line diverging slightly as they approach the end of the jaw. The teeth may now be covered with a thin coating of shellac, which will often prevent their becoming rough, when exposed to the heat of the furnace in soldering. They are next covered over with a coating of clean plaster, which holds them firmly while the linings are put upon them, and then imbedded in a mixture of equal parts of plaster of Paris and asbestos. When this hardens, the wax may be removed from the backs of the teeth, leaving them bare for receiving the permanent lining and attachments to the plate.

Lining and Fastening.—One set may have been furnished with the teeth known as "Robert's teeth," which are made with but one long pin. Under these you will fit a slip of tin or sheet lead, passing from one canine to the last molar on the other side, and a corresponding piece crossing this from the other canine to the other molar. These are patterns from which to cut the slips of platinum. The latter when shaped are to be punched full of holes (through which the body runs, giving increased stiffness to the whole), and placed under the pins, standing edgewise upon the alveolar ridge. Other strips may be introduced wherever you think the work requires stiffening and strengthening: the whole lining may thus be doubled or tripled. A wire also may be run across from one bicuspid to the other, which will counteract any tendency in the work to spread. The pins may now be bent down over the slips holding them in their places, until the fastenings are completed by soldering them together. The linings may thus be put in, in from ten to twenty minutes.

The set provided with the other style of teeth, having two pins, is to be managed in another way. Place the piece on the table, the back edge directed toward you, and the teeth uppermost. Cut platinum into slips one for each tooth, of width equal to that of the tooth and half the spaces beside between it and the one next to it. These, when arranged in their places, will then form a continuous lining behind all the teeth. Bend up about one-eighth of an inch of one end of each strip at an angle of forty-five degrees, and divide this portion by slitting it with four or five cuts. Touch the points of the pins with a camels hair brush dipped in rogue or other easily transferred coloring matter, and apply the slips of platinum, one after the other, to their respective teeth, with the split end resting on the plate, that they may receive the mark for the holes for the pins. Then punch the holes. The upper ends may now be trimmed off nearly down to the holes; and the projecting sides be slit evenly with the edges of the tooth from the top about halfway down, leaving the narrow slips attached. With a small pair of tweezers place the lining on each tooth, letting the pins come through the holes punched for them, and then pinch each pair of pins together with pliers, thus fastening the linings firmly to the teeth. The slips of platinum at the edges are then to be interlocked with the slips belonging to the adjoining teeth till all are bound together in a contniuous lining. The bottoms or split ends resting on the plate should then be pressed down so as to come in close contact with the plate, this being necessary to insure adhesion by soldering. With a sharp pointed instrument make a scratch along the plate about one-sixteenth of an inch from the foot of the linings, which will prevent the solder flowing out upon the plate. Place a small bit of pure gold upon the pins, another bit at the interlocking of each pair of slips, and one or two at the base of the lining of each tooth, adding with each bit as much borax as will adhere to the little piece of solder, and no more. The piece is now ready for the next process of—

Soldering.—You may now gradually heat up the work in the muffle of the furnace, and when it is of a deep red, remove it on a piece of charcoal or other suitable support and solder the parts with a hydraulic blowpipe. But if this or no other one equally powerful be at hand, the piece must be left in the furnace, and a careful watch kept to remove it as soon as the solder all flows; for, exposure to high heat is apt to etch or roughen the surface of the teeth, by the adhesion of plaster and asbestos to the enamel.

After taking the work from the furnace and cooling, the next operation is to remove the plaster; and the portion of this forming the base, on the part that corresponds to the jaw, should be reserved to be used as a support for the piece in the subsequent bakings, which prevents, in a degree, change of shape or springing of the plate. Should the piece soldered in the furnace be found on removing the plaster and asbestos, etched or rough, we will restore it as described under the head of enameling or gumming. The pieces are to be worked, then placed in diluted nitric acid for the purpose of removing the adhering borax and other foreign substances, and then washed again. They are next laid upon the metallic casts to be there held while the plate is scratched or etched with a sharp point over all the surface intended to be covered with the body and gum.

First Coating of Body.—The material we prefer over all others is Allen's preparation, called "body," as prepared by E. A L. Roberts. This being made into a thick paste, with a little water, is taken up with suitably shaped knives or spatulas, and introduced between and around the teeth, and over the palatial arch as far back as the projecting bead or the wire left near the back edge of the plate. The paste should be carefully worked and pressed into the interstices it is designed to fill, packing it solidly, and building up or keeping back according as prominences or depressions are to be produced. Then with your little knives carve out between the teeth, leaving a furrow which will produce a prominence over the fangs, resembling the roots of the teeth as they appear in the natural gums. The crowns of the teeth should be kept carefully free from the coating, as also the spaces between the teeth, lest these should be afterward baked together. Sufficient width must also be cut under along the projecting edge of the plate to admit of its being turned over, as hereafter described.

Baking.—When the plate and teeth are thoroughly cleaned with a brush, and all loose particles of paste removed, it is laid upon the base reserved for the purpose, and this upon a baked fire-clay tile or slide, and is introduced into the outer part of the upper muffle of the furnace, as it becomes hot it is gradually pushed farther in. When quite red hot, it is transferred to the lower muffle, and there brought to a full white heat, at which it may remain from five to twenty minutes, or until it is seen, on drawing it to the outer end of the muffle, to have a glossy appearance. It is then removed and placed in another muffle not connected with the furnace, which should be closed up while the plate gradually cools. The process is somewhat varied in the case of the set with single pins to the teeth, as these require some additional support to counteract any tendency to turn upon the pin, or otherwise move from their place. This additional protection is obtained by turning the plate with the teeth down and burying these for half the length of the crowns in a paste of pure pulverized silex placed to receive them. This will fill the spaces between the crowns of the teeth and may be removed without difficulty after baking. Or, placing the set upon the plaster base as before, we will brace the teeth requiring support by introducing small pieces of platinum in the spaces. This precaution it may be well to adopt in any case.

When the piece is quite cool, it must be placed upon the metallic die to detect any alteration that may have occurred in its fit, and to restore it to its former shape; which may be done by pressing it down with the hand or by tapping the molar teeth with a wooden or horn hammer, and pressing the plate at the same time firmly down to the die. It may sometimes be sprung back by applying the thumbs to the air chamber and the fingers to the cutting edges of the molar teeth and pressing; or a gentle tap with the wooden hammer upon the air chamber may answer the purpose; but the safest plan is to use the die. Should cracks be produced in the body, no harm is done, as these are made to disappear in the second baking. The edge may be turned over by means of the burnisher, using also a little hammer and pliers too, if necessary. After this is done, the plate should be fitted upon the die, to be sure that the fit has not been disturbed.

It is well also to test it in the mouth of the patient before proceeding further, as any alterations required can be conveniently made in this stage; but if the work has been well done so far, it is not essential to try the fit in the mouth.

Second Coating.—The paste for the second coating is made the same as that for the first. It is carefully laid upon all the parts that require to be built out, and is introduced into all the crevices into which it is made to settle, by lightly tapping the piece. With the little spatula the surface is nicely carved and shaped around the roots of the teeth, as in preparing for the first baking. A little ridge is raised with the camel's hair pencil from the line between the two central incisors, running back along the palatial surface to the middle of the posterior edge of the plate; and this ridge is next halved by a central line made along its whole length, by the brush or the edge of the spatula. On each side of the ridge, little prominences are to be raised to imitate the ruga of the mouth; the dentist must, after observing different mouths, exercise his taste and judgment in producing a natural effect. The second baking may then be conducted like the first, (with the exception of its being a little harder), and the subsequent cooling also; when the piece should be placed again upon the metallic die to prove its shape unaltered, in which case it is ready for the coloring.

Enameling, or Gumming.—The "gum," being mixed as was the body, should be evenly laid on, in proportions only to be learned by experience; and in the selection of the shades of color you must be governed by your own taste, as some dentists prefer brighter and some paler tints for their work. I should recommend, however, the use of very thin coating at first; for this can be added to, and a deeper shade given by a second heat if desirable. If the teeth have been etched in soldering, a little coating of etching enamel, of the consistency of cream, should be laid upon them with a camel's hair pencil. The plate being well cleaned is then ready for the furnace; but more care is now required not to expose it too suddenly to a high degree of heat. If pushed too fast into the muffle, pieces are likely to scale off, leaving defective spots, such that it would be necessary to remove the work, cool it down, and repair with more gum. When well heated in the upper muffle, the piece may be removed to the lower one, and exposed to a full white heat from ten to twenty minutes, or until the gum has thoroughly flowed and shines like melted glass.

It is now to be removed and cooled down as before, in a cold muffle. When at blood heat, take it out, and place it in water of about the same temperature, avoiding touching it with the fingers. This is an effectual method of preventing the checking or crazing of the gum, which frequently occurred in the old way of annealing, when the pioce was cooled and taken in the hands. I discovered it some time ago, and communicated it to several dentists in this city; and I notice publicity has been given to it, without my receiving the credit to which I am entitled. Though it appears a simple thing, it is certainly an important improvement. At first, I placed the piece in my mouth on taking it from the muffle; and afterward I substituted warm water. The next and last operation is polishing, in which there is nothing requiring peculiar directions,—I remove from the plate any little particles of gum or body, and rub it thoroughly with fine sand-paper, then with a fine stick and pumice stone or fine emery, and lastly with a steel burnisher or bloodstone, with a little soap suds.

Continuous Gum applied to Partial Sets.—Partial cases may be made of continuous gum; but the work is so various in its nature, that the dentist must necessarily depend much upon his own judgment. Difficult cases will constantly present themselves, that will require the exercise of much study and ingenuity, in which the general instruction that can be given in words, may be of but little service. The first attempt of this kind in my own experience, was in replacing two central incisors.—

Taking two continuous gum teeth, I placed upon them a platinum lining, slitting this down along the edge of one tooth nearly through the piece and up the edge of the other tooth by a parallel cut, leaving the two parts joined together by a narrow slip. This allowed sufficient motion between the teeth, so that they could be adjusted as desired. I then placed a bit of tissue paper on the plaster model, covering the spot to be occupied by the teeth and gum, to prevent the adhesion of the body to the plaster, and holding the two incisors in their places, I worked the body into all the depressions of the gum and around the roots of the teeth. I then removed the whole from the model, and placed the piece in a paste of pulverized silex, or plaster and asbestos, upon a slide, and baked as described for full sets. The little slip of platinum kept the two teeth in place. The work shrunk somewhat; but this was remedied by again placing the piece upon the model, with the intervention of tissue paper covered with a thin coating of body. Into this I pressed the piece, till it occupied its true place, and then filled in again with more body all the crevices around the roots of the teeth, and rebaked.

After enameling, if the work has been carefully and skillfully done upon this plan, it will be as fine a piece in appearance and fit, as can be made. It may then be soldered to a gold plate, and the little strip of platinum between the teeth be cut out. With the body and gum formerly in use, many difficulties were often encountered from discoloration of the gum, or from other injuries incurred in soldering. But with Roberts' material, these are easily avoided, and the piece can be treated the same as a block or single gum teeth. In partial sets on entire plates of platinum, I have sometimes found trouble, from the enamel giving way upon the small narrow points that connected the teeth with the plate, by the shock occasioned in biting. I have consequently left these points uncovered, and used two or three thicknesses of platinum to give greater strength. But where this is likely to occur, gold plates would be preferable, if nicely adapted with single gum teeth, or blocks of continuous gum, as the case might require. I have also applied continuous gum in cases where the natural teeth, from one to five in number, were left in the mouth, by making the plates as in full sets, cutting out around the natural ones, and raising a small bead, or placing a light wire around about one-eighth of an inch or more from the teeth, against which the gum or body is to be finished. The points around the teeth are to be left free, in order to be burnished down in case of imperfections caused by the difficulty of obtaining exact impressions in these places. In such cases, I have sometimes formed a strong standard of several thicknesses of platinum fitting closely against one or more natural teeth, leaving a loop-hole, through which to run a gold clasp for afterward securing the artificial set.

I have also secured the gold to the standard by rivets of platinum and sometimes by two or three gold screws, not providing, in these cases, the loop-hole. These methods are to be preferred to using solder for fastening; for, in case of repair, the clasps are easily removed without leaving any foreign substances: but in case of soldering, however carefully they may be removed, there will remain some alloy, which, in the baking heat to which the piece is to be exposed, will be incorporated with the platinum. Even so small an amount of silver as may be in gold coin used for solder, will communicate a yellowish tinge to the gum, spoiling the whole work. Many operators in their early practice, I doubt not, experienced this result; and learned that no alloys, especially of silver or copper, can be admissible for soldering this work. I have tried platinum clasps without suceess, as no elasticity could be obtained, and therefore would not hold upon the teeth. Another source of mischief may properly be noticed in this place. In baking, especially with a new furnace, or with muffles lately renewed, either at the first or second heat, or it may be in enameling, the piece is sometimes changed in its texture and color, as is supposed by the gases present, and the phenomenon is called gassing the piece. The body becomes porous like honey-comb, and of a bluish color. When this occurs, there is no remedy but to place it upon the metallic die, removo the whole of the injured part, and replace it with a new coating of body and gum. The teeth are seldom, if ever, thus effected. As a precaution, the muffles should be well ventilated with holes for the passage of the heated air and gases.

Though continuous gum work may at first appear tedious and beyond the reach of inexperienced dentists, they will soon find that by patience and perseverance, it may be done rapidly, and with much more satisfaction than gold work. Their patients will be better pleased with it, and the practitioners, who are influenced by professional pride, and are unwllling to place any but the best work in the mouths of their patients (except where circumstances justify the use of inferior articles), will find that they can not dispense with it.

Repairing.—Dentists, entirely unacquainted with the method of preparing continuous gum work, have been known to speak unfavorably of it to their patients, because of its weight, its liability to be broken, and the impossibility, in this case, of its being repaired. No substitutes for natural teeth are past finding fault with. We claim no perfection for this style; but we do insist, its defects are of less account than those of other kinds of work. It is true, the pieces are more liable to be broken by a sudden blow or fall; and for this reason, those who wear them should be especially cautioned to protect them from injury. Yet it has been proven by comparison with gold work, that the continuous gum presents fewer cases of injury, than the gold; and that these cases are by fractures resulting from carelessness in dropping the pieces. But, even if badly shattered, and several teeth should be knocked out, the piece may be soon restored, with no mark or scar indicating fracture or repair. In case of a single tooth being broken, a new one is readily inserted by entirely removing the crown of the injured one, and grinding out a niche in the gum at its base, nearly one-fourth of an inch deep, to receive the new tooth; then fill up the niche with body, and press the tooth you wish to insert down to its proper position; trim the surplus body about the neck of the tooth as in full sets, absorb the moisture with a napkin, and apply the gum to the body and wherever required. Stay the tooth with a little plaster and asbestos placed upon its point and reaching over, so as to include the adjoining tooth on each side. A better method, however, is to place the teeth downward, imbedding their points in a paste of pulverized silex laid upon a slide, and then subject the piece to the heat required for enameling. Once baking will generally suffice to complete this operation. But, if a piece has been more seriously injured,—say by loss of a central and canine tooth, with a point broken out from the edge of the gum, and the plate is bent so as to have lost its fit, and the gum shrunken away at any point,—we adopt a thorough method of repair. We first take an impression of the mouth and make a plaster model; upon this we place the plate, and over the point where the gum is shrunken we chip off the body and gum, and with a burnisher work the plate down wherever required, to exactly fit the model. We then make a niche for each tooth to be inserted, apply the body and gum, stay the teeth, and bake the piece as above described. If it has been thorougly packed, two bakings will be sufficient, but sometimes three may be required. The only rule is, to repeat the operation till the object is accomplished, taking care always not to overheat the piece. In case of the piece having been long worn, it is well, before doing any thing to it, to subject it to a moderate degree of heat, sufficient to burn off any impurities it may have collected in the mouth.

Another set may be presented for repair, literally broken to pieces; but the plate remaining a perfect fit, and some of the teeth being undisturbed, we wish to avail ourselves of these. We therefore make a dam of putty around the edge of the plate, and run in fusible metal to form a cast, which shall serve as a support for the plate. Not to endanger cracking the teeth by the heat, the piece may be placed in a dish containing a little water, and after the metal is poured and begins to harden, more water may be added, so as to cover the whole mass. But this s hardly necessary, if the alloy be run nearly at its cooling temperature.

The piece being now supported upon the cast, and held firmly with one hand, a small chisel, made from an excavator, may be applied with the other to the old material which it is desirable to remove, and an assistant gently tapping this with a hammer, the body is quickly chipped off between the teeth, and wherever the chisel is directed without injury to other parts, or without mis-shaping the plate. The teeth may now be inserted and soldered to the plate, with the old or new linings if required, and the new body and gum may then be applied, as in making a new piece. All this may seem to involve much time and trouble; but little more is really required than to repair a gold plate. The cast of fusible metal is much more readily made than a plaster cast. The old body and gum is removed and new applied, in shorter time than two gum teeth can be fitted upon the gold plate, and the soldering and first baking of the body requires no more time than to solder and cool the gold work. We then have, in the one case, the gum to be applied, and in the other, the gold is to be polished; so that the whole difference of time involved, however great the repairs, need not be more than one or two hours. But a single tooth may be repaired as soon as a gum tooth on gold plate. One difficulty, often met with in mending, requires to be noticed. It arises from the necessity of employing mixtures likely to be of different composition from that of the original body; and possibly more infusible. In this case, the old body will melt, before the new has become incorporated with it, thus ruining the work by overheating. In some instances, after one baking, I have been obliged to condemn the whole work and entirely replace the old body. This difficulty is now obviated by being able to use always the same material; it being prepared in large quantities, by Dr. E. A. L. Roberts (to the amount of a ton weight at a time), so that the supply of uniform composition can be depended upon for years to come.

Concluding Remarks.—In looking over this paper, which has already reached a length I did not anticipate, it is easy to perceive that numerous points have escaped notice, which, to the experienced manipulator, are of trivial importance; but to the student, without more detailed instruction, may be insurmountable obstacles to his farther progress. If, however, the latter possess a fair endowment of skill and ingenuity, he need not despair of success.

The plain outline of the various operations, as given above, may be his general guide which will lead him to good results; but his own judgment, skill and taste, moreover, must be repeatedly exercised, independently of my instructions, however minutely they may be given. Like all other processes, this can not claim to have reached perfection, and, therefore, there is still room for improvement. It admits of infinite variety in its application, and hence presents a fine field for artistic taste and invention; which, I can not doubt, will be well improved by the genius and energy exhibited by the Dental profession in all such directions. There is a fascination about this style of work, which no other possesses, as it seems to compete, in point of beauty, with nature itself.

A NEW METALIC ALLOY.

M. Gersheim has just discovered a new amalgam possessing the singular property of being almost as soft as wax when warm and of hardening in the course of a few hours when cool. It may be modeled into various shapes by the sole action of the fingers; it adheres strongly to other metalic substances, as also to glass and porcelain; so that it may serve to mend broken crockery, and is equal in that respect to the best mastic. When hard, it takes a fine polish like that of silver or brass.

The Selma, (Ala.) *Sentinel* says, that a dentist of that city recently prepared a full set of artificial teeth for a lady of the vicinity, some sixty or seventy years old, and who had been quite deaf for twenty years past. As soon as the teeth were placed in her mouth, the hearing of the old lady became quite suddenly as good as it ever had been.

A APPEEL FOR ARE TO THE SEXTANT OF THE OLD BRICK MEETINOUSE.

BY A GASPER.

O sextant of the meetinouse, which sweeps
And dusts, or is supposed to ! and makes fiers,
And lites the gass, and sumtimes leaves a screw loose,]
in which case it smells orful—worse than lamp-ile ;
And wrings the Bel and toles it when men dyes
to the grief of survivin pardners, and sweepes pathes;
And for the servases gits $100 per annum,
Wich them that thinks deer, let em try it ;
Getin up befoar starlite in all wethers and
Kindlin fiers when the wether is as cold
As zero, and like as not grean wood for kindlers ;
i would'nt be hired to do it for no some—
But o sextant ! there are 1 kermoddity
Wich's more than gold, wich doant cost nothin,
Worth more than anything exsep the Sole of Mann !
i mean pewer Are, sextant, i mean pewer Are !
O it is plenty out o dores, so plenty it doant no
What on airth to do with itself, but flys about
Scatterin leavs and blowin off men's hatts ;
in short, its jest 'free as are' out dores.
But o sextant, in our church its scarce as piety,
scarce as bank bills when agints beg for misshuns,
Wich some say is purty often (taint nothin to me,
Wat I give aint nothin to nobody) but o sextant,
u shet 500 men, wimmen and children,
Speshally the latter, up in a tite place,
Some has bad breths, some aint 2 swete,
Some is fevery, some is scrofilus, some has bad teath,
And some haint none, and some aint over clean ;
But every 1 on em brethes in & out and out and in,
Say 50 times a minit, or 1 million and a half breths an our.
Now how long will a church ful of are last at that rate,
I ask you, say 15 minits, and then what's to be did ?
Why then they must breathe it all over agin,
And then agin, and so on, till each has took it down
At least 10 times, and let it up agin, and wants more.
The same individible doant have the privelidge
of brethen his own air, and no ones else :
Each one must take watever comes to him.
O Sextant, doant you know our lungs is bellusses ;
To blo the fier of life, and keep it from
goin out ; and how can bellusses blo without wind ?
And aint wind *are ?* i put it to your conschens.
Are is the same to us as milk to babies,

Or water is to fish, or pendlums to clox—
Or roots and airbs unto an injin Doctor,
Or little pills unto an omepath,
Or boys to gurls. Are is for us to brethe.
Wat signifies who preeches if i cant brethe ?
Wats Pol ? Wats Pollus ? to sinners who are ded ?
Ded for want of breth ; why sextant, when we dye
Its only cause we can't brethe no more—that's all.
And now, o sextant, let me beg of you
2 let a little are into our church.
(Pewer are is sertin proper for the pews)
And do it weak days and Sundays tew—
It aint much trouble—only make a hole
And the are will come in of itself ;
(It luvs to cum in whare it ean get warm ;)
And o how it will rouse the people up,
And sperrit up the preacher, and stop garps,
And yawns, and figgits, as effectooal
As wind on the dry Boans the Proffit tells of.

ANOTHER CHLOROFORM CASE.

Another dentist, a Dr. Webster of Montreal, has been convicted of an attempt to commit a rape upon a patient while under the influence of chloroform. It is insisted by those who understand the effects of chloroform, that in most cases, outrages like these are vagaries of the brain, and exist only in the imagination. If so, why will dentists continue to run the risk of administering chloroform to patients who are unattended? If not, why will females, claiming to be respectable, subject themselves to the risks which numerous convictions seem to show result from their taking chloroform when not in the presence of third parties.

AMERICAN DENTISTS IN EUROPE.

The Paris correspondent of the New York *Times*, says:—"I will not pretend to explain why dentistry in Europe is so far behind that in the United States. It is most singular that, in France, where surgery and the accessories of the toilet have been brought to the highest perfection, the art of the dentist should have been left so completely in the rear. Until very lately, the art was ranked among the lowest of the trades ; a dentist was, in fact, but a puller of teeth, and one of the commonest expressions in French is, even to this day, '*Il ment* *comme un arracheur de dents!*' (He lies like a dentist, or a tooth puller.) It was not until American dentists settled in France that the art was at all respected, or, indeed, deserved to be respected.

"Mr. Brewster was the pioneer of American dentists in Europe. He settled in Paris in 1836, and soon became the dentist of Louis Philippe, the Czar Nicholas, and other monarchs. He was bought out by Mr. Thomas W. Evans, of Lancaster, Penn., in 1850, who, with his brother Theodore now continues the business. These gentlemen not only maintain the position ceded to them by Dr. Brewster, but they have extended it. They are the dentists to the courts of France, Russia, Bavaria, Wurtemburg, and, I believe, of Belgium and Saxony. With such high protection it may be readily conceived that the practice of the gentlemen is immense. Besides the Legion of Honor granted to the elder brother by the Emperor of France, both the brothers have received decorations, and rich gifts from the other monarchs by whom they are employed.

"Mr. James Fowler, formerly a partner of the deceased Harvey Burdell, afterwards established in Bleecker Street, New York, came to this city four years ago, and went into business as a dentist on the Boulevard des Italiens, in partnership with a French merchant by the name of Preterre, the latter furnishing the funds for the establishment of the house. At the end of three years, however, Mr. Fowler sought and obtained before the tribunals a dissolution of the partnership, and at once established a new house in the Place de la Madeleine. Since his residence in Paris this gentleman has made several pieces in gold for the replacement of lost parts, which excited the astonishment and the admiration of the Academy of Medicine and of the entire faculty of Paris. Among these were an entire lower jaw in gold with the teeth affixed, several upper jaws, obturators, etc. Although not new in America, it was the first time any successful attempt of the kind had been made in Europe; and Mr. Fowler is now in the enjoyment of a first rate reputation and practice. Mr. Preterre obtained a workman from the United States, of the name of Fowler, and is continuing the business at the old place, under the name of Fowler & Preterre.

"Mr. Horner, of Philadelphia, is a partner in the long-established English house in the Rue de Luxembourg, which now bears the name of Stevens, Watson & Horner. This is the largest and richest dental establishment in the world, its income reaching $60,000 a year. Gold work, however, has only been introduced into this house since the entrance of Dr. Horner.

Previously their artificial pieces were made of hippopotamus entire, and decayed teeth were filled with amalgams—the ancient French and English system.

"Dr. Gage, formerly of Mobile, has also established himself in Paris, as a dentist, and like the others, is doing a good business. Mr. Potter, an American dentist, who has practiced in Bombay and Lisbon, has been for some years established in this city, and lately took into partnership a dentist of New York, Mr. Crane.

"Dr. Parmly, formerly of New Orleans, an elder brother of Dr. Eleazer Parmly, of New York, has been practicing dentistry for three years past upon children in the schools of Paris and London, till an attack of typhoid fever, followed by partial paralysis, disabled him from the active pursuit of his profession. He continues to reside in Paris, however, and gives advice to families and schools in regard to the care of the mouth in young people.

"A gentleman who announces himself to the public as an American dentist, Dr. Koth, 'formerly of the United States, late dentist to her Majesty the Queen of Spain,' has established himself in Paris within a month. Dr. Koth, according to his circular, speaks English, German, Spanish and Swedish.

"As I was passing rapidly in a carriage, a few days ago, through an obscure quarter of the Faubourg St. Germain, I had a hasty glance at a sign which had evidently just come from the painter's hands, and which bore the words *Dentiste Americaine*, preceded by a name of the purest Gallic origin. So you see how the current is running.

"So wide-spread is the reputation of American dentistry, that the teeth of nearly every monarch in Europe are filled, pulled and replaced by Americans, or soi-disant Americans. Thus, as I have already mentioned, the Evans, of Paris, are the dentists to courts of France, Russia, Bavaria, Wurtemburg, and some other smaller States. At Rome, Dr. Burgess, an American, is the principal dentist; at Madrid it is Dr. McKeehan, another American. The principal dentist of Berlin is Dr. Abbott, of Bangor, Maine, while the court dentist is a German, who studied in America, and who calls himself in consequence an American dentist. At Vienna, where it is almost impossible for a foreigner to get permission to do business, Dr. North, also from the State of Maine, has rapidly gained the first position among the aristocracy, although he has not yet arrived at the court. When he first went to Vienna, Mr. North was obliged by the police restrictions from giving any publicity, either by advertisements or a sign at the door. While stowed away privately in the upper part of a house, wondering whether his enterprise was going to fail or succeed, he was one day surprised at receiving the visit of Prince Lichtenstein, who came to get work done. The American complained of the rigor of the police, and the Prince said to him, 'never mind the police; take a house to suit you, put your sign out, and if they trouble you come to me.' Mr. North did as the Prince advised, the Prince sent his daughters and others of his relatives and acquaintances, and from that day the fortune of Dr. North was a fixed fact. He numbers now in his protectors not only the Lichtensteins, but the Metternichs and Schwartzenbergs.

"In St. Petersburg, the aristocracy employ two Irishmen, brothers, who studied their profession with Dr. Brewster, at Paris, and who call themselves American dentists. The principal dentist at Hamburg is Dr. Cohen, who studied in America, and calls himself an American dentist. The brothers Tellander, who studied dentistry in New York, do the court and the principal business in Stockholm and Christiana, the capitals of Sweden and Norway. There are a few other dentists scattered through the German Confederation, Germans by birth, who received their professional education in the United States, and who call themselves American dentists.

"At London, Mr. Rann, an American dentist, has rapidly reached a large practice, in exclusively aristocratic families. Another American, whose name I forget, has also arrived at a large practice in London. At Manchester there has been an American dentist for a good many years. This closes the chapter on dentistry.

"Two American Physicians are in practice in Paris, Dr. Bigelow, of Boston, and Dr. Beylard, of Philadelphia, both graduates of the school of Paris. The latter gentleman, however, is of French origin; he was two years house physician in the wards of Dr. Trousseau, at the Hotel-Dieu. Both these gentlemen are doing well.

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MICHIGAN STATE DENTAL ASSOCIATION.

Fourth Annual Meeting, held in the city of Detroit, January, 11th and 12th, 1859.

Agreeable to published notice, the Society met at the office of Drs. Whiting & Benedict, at 7 o'clock, P. M.

Both President and Vice-President being absent--

Dr. R. S. Bancroft, of Romeo, was appointed chairman, and John A. Harris, of Pontiac, secretary, pro tem.

The minutes of proceedings of last meeting were read and approved.

Letters were read from the President and Vice-President and several members, stating the cause of absence, and expressing regrets therefor, with sentiments of sympathy and encouragement.

The Society now proceeded to the election of officers for the ensuing year.

Dr. C. B. Porter, of Ann Arbor, was elected President.

Dr. R. S. Bancroft, of Romeo, Vice-President.

Dr. L. C. Whiting, of Detroit, Secretary and Treasurer.

No special order of business having been prepared, it was resolved by acclamation, to take up the same subjects for discussion, and in the same order, as at the previous meeting.

The election to membership was now proceeded with. Six new members were added to the list, and on motion of Dr. Harris, of Pontiac,

John T. Toland, from Cincinnati, was elected as an honorary member, by acclamation.

MEMBERS PRESENT.—Drs. H. Benedict, L. C. Whiting, W. Cohoon, C. F. Knowlton, Geo. L. Fields, T. A. White, J. H. Farmer, R. V. Ashley, D. C. Prevost, of Detroit; R. S. Bancroft, from Romeo; T. D. Ingersoll, Monroe; C. B. Porter, Ann Arbor; John A. Harris, Pontiac; A. F. Barr, Ypsilanti; S. C. Smith, Flint; C. S. Chittenden, Hamilton, C. W.; John T. Toland, Cincinnati, O. Besides which, quite a number of gentlemen, dentists and physicians were in attendance, the greater portion of the time, making an assembly of from twenty to twenty-five persons.

The discussions were now opened, each member being limited to ten minutes.

SUBJECT 1st.—PREPARING CAVITIES.

From the difficulty of illustrating, and the fact that nearly every case requires different treatment, calling into aid the judgment, tact and skill of the operator, there was a manifest reluctance to open the discussion on this subject.

Dr. Whiting, however, gave a very interesting explanation of his mode in a variety of cases, filing, wedging, etc., as the case requires, dependent on the situation of the teeth, age of the patient, etc.

Several others made some remarks, more in the form of conversation than discussion, all of which was deeply interesting and gratifying.

Adjourned to meet at same place to-morrow morning at nine o'clock.

WEDNESDAY MORNING, Jan. 12th, 9 o'clock.

Society met according to adjournment—minutes read and approved.

SUBJECT 2ND,—FILLING TEETH,

Was taken up and the discussion opened by

Dr. Benedict, who gave his experience and practice in different cavities, and different materials used, both foil and crystal gold, in some cases prefers foil, in others sponge. In reply to question, stated how he treats sensitive dentine, abscess, etc., to the satisfaction of all present.

Dr. White, in shallow cavities of the front teeth with wall broken, finds it frequently difficult to get a good start, especially when the decay extends near to the nerve, is very careful not to expose or puncture the nerve, uses creosote, arnica and origanum, to allay sensitiveness, then varnishes the cavity with gutta percha, which being a non-conductor protects the pulp from the sudden changes of temperature, chisels down the ragged edges to obtain smooth strong edges, thinks the most of failures occur from a neglect of this precaution, tries to get points dovetailed, if there are no points he makes them, sometimes cuts a groove around the inside margin. Uses both foil and sponge but lately crystal gold alone, having dryed the cavity, (the dryer the better) he proceeds to fill, pressing lightly at first, fastening the gold in retaining points, and building a bridge over the nerve, and thus continues adding layer after layer until the cavity is full. In this way he has always been successful.

Dr. Chittenden don't coincide with all the ideas advanced, not met with much success in wedging, but still uses it. Take the case of a central incisor, with a large approximate cavity, first cut an opening with a chisel, then with a half round or oval file, separates well, so as to give a strong wall and enable him to prepare the cavity well. Then, with serrated instruments and soft foil (generally Abbey's) in pellets, begins at the bottom of the cavity, and with hard pressure packs well up to the bottom and toward the gum. After a good foundation is laid, then takes crystal gold foil and fill up flush, pierce a hole in the center and pack in a wedge, the object being not so much to make it adhere, as to have the cavity perfectly full, it don't do to anneal foil in pellets, as it makes a solid mass, he prefers always to have a strong wall, and generally cuts away until it is strong enough to resist all the force he can apply. The Doctor exhibited his mode of forming pellets, which is the same as the cylinder, described by numerous writers. A slate and pencil were now procured, and the discussion run into a conversational and illustrative character, though highly instructive, is impossible to report.

The constitution was now read by the secretary and signed by new members, initiation fees paid, etc.

On motion the rules were suspended, and the remainder of the forenoon was occupied in relating cases of interest which have fallen under the notice of different members.

Dr. Chittenden related the case of a child, kicked by a horse on the chin, process fractured, some of the teeth lost, some buried in the process and afterwards resumed their proper place without any scientific aid.

Dr. Harris. A case of fracture of process involving three molars and dens sapientia teeth, occurred in the attempt by a physician to extract a second bicuspid, dissected around and removed the process with teeth attached.

Dr. Smith. A case of gradual displacement of an incisor tooth, caused by the force of the lower teeth striking against it, until it protruded to the annoyance of the patient, and was extracted. Approved.

Dr White. Case of diseased antrum, great pain, inflammation, physician advised removal of the jaw. On examination by self and Dr. Cohoon, opinions concurring, removed the roots of two bicuspids, opened the antrum, from which a large quantity of offensive matter was discharged, treated with creosote and perfectly restored.

Dr. Whiting treated a scar in the cheek, called by a physician cancer. Removed an offensive tooth, healed the sore and removed the depression by adapting a piece of tin with Burgundy pitch, to draw it to the proper shape.

Dr. Smith. Similar case cured by pledgets of cotton between cheek and tooth, saturated in tinct. arnica, and renewed daily.

Dr. Field. A case—hole in gum size of wire excavator, considerable discharge and no pain. The fang of a bicuspid transverse to the opening. Asked advice, which was given, viz: to remove fang and treat with camphor and creosote.

Dr. Chittenden, called by physician in consultation, to remove necrosed bone, introduced a probe and out popped a fang, discharge ceased and man got well.

Dr. Harris. Case—teeth badly decayed, patient in picking them with a pin, the pin slipped out of his fingers and disappeared. Probed about two inches but failed to find it. No pain.

Dr. Field also exhibited a second molar and dens sapientia, the posterior fang of molar perfectly united to the anterior surface of the dens sepientia, so as to form an angle of thirty-five to forty degrees.*

In bleeding, after the extracting of teeth, Dr. Harris uses tannin and ether.

Dr. Field uses myrrh and camphor, on cotton held by a piece of cork and bandage.

Dr. Farmer, perchloride of iron, and related an interesting illustration of its effects, for which we have not room.

Dr. Chittenden thinks, in protracted bleeding, the gums are also implicated, has used tinc. perchloride of iron with never-failing success.

Dr. White has but one panacea, strong vinegar with alum, and compress.

On motion, adjourned to two o'clock.

Afternoon Session, Wednesday, 2 o'clock.

Society met pursuant to adjournment. On motion, reading of minutes was dispensed with.

Several bills were presented, for expenses incurred since last meeting, all of which, on examination, were approved and ordered to be paid.

Subject 3rd.—Treatment of Exposed Nerves.

The discussion was opened by the reading of a paper from Dr. Mansfield, on this subject, which will be found in another part of the Reporter, under the head of Original Communications.

Dr. Whiting has treated nerves and filled fangs, as described by Dr. Mansfield, frequently finds deposits of Lime at the point of the root, and thinks it necessary that such deposits be removed in order to ensure a healthy condition, sometimes the nerve cavity is compressed, he considers it necessary to open the cavity, so as to get to the point of the fang, by some means, remove the deposit, and by careful treatment the fang will become healthy.

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*Dr. F. has promised to give us the history and description of this case in detail, with an engraving of the teeth in position, for the next number of Reporter. And we would suggest that each of the gentlemen under whose observation the foregoing cases occurred, will do likewise. These are cases of much interest, and it is from such that facts are deduced, and great scientific principles established.

Dr. Ingersoll does not claim anything new. In these cases it is necessary to labor both mentally and physically, the chief object is to get the fang perfectly clean and healthy, and to induce his patient to exercise patience. To do this, he places the patients on their own responsibility which causes them to be careful in observing instructions, in this way he is enabled to save a great many. Has treated ulcerated fangs, where he could pass a probe beyond the point of the root, with care and patience has succeeded.

Dr. Chittenden has been doing fang filling only about a year, and to his surprise has lost none. Never attempts molars, because he can not be certain of the fangs being perfectly clean. Never observed any appearance of calcarious deposit. Uses for destroying nerves, equal parts of arsenic and morphine with creosote, generally allows it to remain twenty-four hours, sometimes has to repeat, has by neglect of patient remained a week without any appearance of injury.

Dr. Bancroft uses arsenic and pledget of cotton saturated with creosote, retains application from six to twenty-four hours, if convenient to see the patient in six hours, and finds the work accomplished, he removes the application. He finds less complaint of pain from this application than when arsenic and morphine are combined.

Dr. Smith has used chloroform, and thinks it better than morphia, does not use it in any specific quantity, but saturates a piece of cotton, places it in the cavity in contact with the exposed pulp, and covers it *quickly* with wax, and has no trouble, rarely fills in less than a week or ten days after destroying the nerve, the chloroform destroys the nerve.

Dr. White is rather inclined to stick to the old style at the expense of being considered an "old fogy," has used equal parts arsenic and morphia, mixed in conserve rosa, but now uses arsenic alone on a pledget of cotton, saturated with creosote and rarely finds more than one application necessary. If there seems to be any degree of inflammation takes a small pledget of cotton saturated with creosote, passes it to the end of the fang and lets it remain there, fills immediately and finds less trouble than by waiting.

Dr. Farmer uses three parts arsenic and two parts sulph. morp., which rarely produces pain, when it does you have only to wait the proper length of time and it will subside. Has met with cases where the nerve seemed to be destroyed, but great tenderness existed at the apex of fang, in such cases has repeated the operation with satisfactory results.

Dr. Porter's expirience is similar to the foregoing. He has met with cases of tenderness of the apex when the nerve seemed to be destroyed, but on close scrutiny has discovered in such cases a *film* of bone to obstruct the nerve canal, and cut off communication and prevent the medicine from being conducted to that part of the nerve beyond this barrier. If this bony film be removed and the application renewed, there can be no difficulty. Prefers to remove the application as early as possible, if allowed to remain too long the arsenic is absorbed by the bone, which produces a soreness or sensitiveness of dentine, which it is difficult to remove.

Dr. Benedict here related a little experience. A lady called to have a tooth mounted on pivot, the fang was very sore, after considerable questioning he discovered that she had been trying to kill the nerve with arsenic. She had evidently applied too much, and the bone had absorbed it, he applied creasote, closed the cavity and let it remain ten days, when all soreness had disappeared, he filled the fang, mounted a tooth and had no further trouble.

Subject 4th.Alveolar Abscess.

Dr. Benedict opened the discussion. His method of treatment consists in drilling, or otherwise cutting through, so as to pass a probe or broach in freely, then treat by application of creosote or nitrate of silver.

Dr. Chittenden pursues the same course, except that he used nitrate of silver first, to cleanse the cavity.

Dr. Whiting proceeds the same as in the treatment of a diseased fang, cleanses and applies creosote, rarely has any trouble, but sometimes when the patient takes cold the symptoms return.

Dr. Smith thinks there is but little use of any kind of treatment. If the tooth is *dead* there must be a discharge, and unless the absorbents *take it* up, *it* must make its escape, therefore seldom attempts to treat at all.

Dr. Bancroft's experience is similar to Dr. Smith's, but with a few exceptions of successful cases.

Dr. Whiting agrees with the two last speakers. When the periosteum is destroyed and all the attachments broken up, there is but little hope of success, has tried all modes recommended, has cut, scraped, etc., seeking for the bottom, but with no great success.

Dr. Porter reported a very hard case of a *central incisor* in which he tried nit. argart, chlo. soda. creosote, etc., and treated it nearly six months without success, finally used chloride of zinc, which healed it promptly, after which he filled the fang and crown with gold, and it is now doing well—this occured several years ago. Nearly all incisors and cuspidati succeed, but bicuspids and molars are doubtful.

SUBJECT 5TH.—MECHANICAL DENTISTRY.

Dr. Chittenden leads the discussion. He takes impressions in wax, and uses cups of peculiar construction, viz: with the center raised as high as the marginal edge of the cup, with a projecting *flange* on the outside to press out the cheeks and lips to prevent it from dragging in removing from the mouth. Uses plaster in some special cases of upper sets.

Dr. Benedict uses plaster both above and below for full sets, mixed about as thick as cream, stirring constantly until *nearly* ready to *set*, then places it in the mouth and retains it immovably until it is set, which requires from 5 to 8 minutes.

Dr. Smith uses wax, tried plaster without success.

Dr. Whiting. Although the taking of impressions is of great importance, it is not all—it is quite as important to obtain a good cast from the impression; thinks best to varnish the plaster casts with shellac, then oil, which causes them to separate readily, does not observe any specific time, but puts it through as fast as possible, and had the best success when most hurried.

Dr. Bancroft thinks it important to take casts as quickly as possible, from plaster impressions, otherwise the expansion of the plaster will destroy the fit.

Dr. White thinks plaster expands for the first twenty-four hours and afterwards contracts, and recommends rapid manipulation. The greatest difficulty occurs in partial sets, where the teeth are irregular. In such cases finds *gutta percha* just the thing. Warm it and press firmly to the arch, sometimes there is a little difficulty in removing, but its elasticity enables the operator to remove it, and when removed, it resumes the position it held in the mouth.

Dr. Farmer mixes wax and resin, fifteen per cent. of the latter. Sometimes uses gutta percha, and with Dr. White, thinks it excellent he warms it in hot water until sufficiently soft, and is enabled to take an impression so *fine* as to preserve the ridges and irregularities on the natural teeth.

On motion, adjourned until 7 o'clock, P. M.

EVENING SESSION.

Society met agreeable to adjournment, at seven o'clock, taking up the—

SUBJECT 6TH.—GETTING UP CASTS.

Dr. Whiting, leading off in good style—says after taking plaster cast, he takes an accurate model in sand, for male dies he uses zinc, sometimes adding antimony, (but after a few meltings the antimony is lost,) which he pours into the model of sand, then melts a quantity of lead and dips the male cast in, holding it steadily until the lead hardens by cooling, but when a particularly nice cast is wanted, he places the male cast in a box and pours the lead upon it, and in difficult and irregular cases, uses Howe's Flask.

Dr. Bancroft's method is similar to the above, but sometimes uses one-third type metal which mixed with the other metals, makes the casts harder and requires a less number of duplicates.

Dr. Chittenden's mode differs but slightly from Dr. W. Ordinary zinc leaves little nasty indentations in the plate. Now uses sheet zinc, which is more smooth and uniform, but in very particular cases uses pure tin and lead.

Dr. Benedict thinks if very fine moulding sand is used and the metal not too hot, no difference will be found between *slab* and *sheet* zinc, and no difficulty with either.

Dr. Fields generally uses *sheet* zinc for male casts, but in very particular cases uses brass, it being harder and smoother.

SUBJECT 7TH.—MOUNTING ARTIFICIAL TEETH.

Dr. Benedict, with great minuteness, describes his mode as follows:

Takes the impressions and casts as previously described—uses gold plate, *never less* than nineteen carats fine, swage plates between zinc and lead, not too much at first, uses a second set of casts and brings up very near as close as wanted, turns the edges of the rim, takes a new set of dies, drive up close and try it in the mouth, it generally will fit, if not, blames it on the *impression* and takes a new one, and proceeds as before, but with greater care. Rarely uses chambers, but places one or two thicknesses of paper over the hard palate to prevent rocking, try it in the mouth, arrange the teeth *just right*, grind the ends of the gums off square, so as to leave them stong, take a strip of plate, and solder on so as to cover the ends of the teeth (not lap over) but barely cover the ends, thus solders on another strip, which makes a double plate as a base, or rest for the ends of the gum, objects to the rim which laps over the ends of the teeth, as it forms a trough or cavity which it is impossible to keep perfectly clean. Now place within a German silver rim made for the purpose, and invest in plaster, put on the backings, uses double backings fitted to the teeth and dressed first, if teeth are irregular in length must make the backs especially adapted for each tooth, fit them into place and dress the backs rounding, put the teeth back to their place, put on some wax, remove the plaster and apply fresh plaster. He uses solder which melts but little, below the plate—for soldering to the plate, uses solder that flows a little easier. Solders all kinds of work with a mouth-pipe, it requires from ten to fifteen minutes to solder a full upper set, has done it in eight minutes and has put an entire job through from 9 A. M, to 6 P. M. If there should happen to be any crevice between the tooth and plaster, melt some clean white wax and pour it in, this keeps the work clean and sweet.

Dr. Chittenden expressed great gratification, had used the old rim, coming over the ends of the teeth, which he always deemed a sinkhole of filth. This mode of Dr. B. is "just the thing," is glad he come, and feels well paid for the trip, etc.

Dr. Porter differs in removing the rim although it amounts to the same—he pours plaster *inside*, a little over the edges of the teeth, thus retains them constantly in position, and is enabled to take them off and put them on at pleasure.

Dr. Field has done some cheoplastic work, but don't think much of it, uses also gold plate-work and continuous gum-work, the latter he thinks the best. Gets up his plates as before described, but uses a *double* plate, the inner one reaching just to the alveolar ridge and terminating in the upturned flange or rim under and against which the "body" is packed and flowed, rims inside and outside, thus giving great strength—never heard any complaint of weight. If a plate fits accurately, the weight is imperceptible. Uses Robert's Gum, never had a job to crack, scale or break, except from falling. If the furnace is hot, can mend or replace a tooth or teeth in half a day. Grind out to admit the tooth, put on a back and solder to the old back, build up with body and gum and bake as a new piece, no scar or imperfection can be seen, in appearance the mending can not be perceived.

Dr. Bancroft likes cheoplasty, *Blandy's Cheoplasty*, don't know anything about any other, has supplied cheoplasty to patients who had been wearing gold, and *they say* it tarnished less than gold, knows of several cases doing remarkably well.

Dr. Chittenden uses cast plates in the lower jaw on account of the weight, which he deems to be an advantage in many cases.

The subject of "*Solder*" was now opened.

Dr. Farmer uses no zinc in solder, but takes scraps of gold plate and adds silver and copper. In cheoplasty the fit is so perfect the weight is inappreciable, if it weighed three ounces it would not be observed. Had a case in which the muscles were trouble *some*, cut the muscles away and now has no trouble, and the lady has remarked she "would not take *two gold* plates for it." Makes his own compound.

On motion of Dr. Chittenden, a committee of three was appointed to prepare the business and a list of subjects for discussion at the next meeting.

Drs. Porter, Chittenden and Whiting were appointed the committee, with instructions to publish in the DENTAL REPORTER, not later than the August Number.

Motion of Dr. Benedict that each member is hereby earnestly requested to prepare an article or essay in writing, on one of the subjects to be discussed, to be delivered in person, or sent in by letter, and read before the society, also that all come prepared with written notes, of the heads or points for remark on the different subjects. Adopted.

Motion of Dr. Benedict that this society when it adjourns, will do so to meet again on the second Tuesday in January, 1860, in the city of Detroit. Adopted.

Motion of Dr. Bancroft that thanks of this Association be tendered to Drs. Whiting and Benedict, for the use of their rooms, occupied by the Association.

Motion of Dr. Porter that the thanks of the Association be tendered to Mr. Toland for his attendance and assistance, with an urgent hope that he will favor us with his presence at our next meeting. Adopted.

Being loudly called for, it was deemed necessary to make a response, which our *modesty* confined to an acknowledgment of the kindness and honors of which we were the recipient.

Motion of Dr. Farmer that a list of those present, and a brief sketch of these proceedings be published in the daily and weekly papers of this city.

At ten o'clock the Society adjourned, to meet next year at same place, of which ample notice will be given.

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CINCINNATI, O., Jan. 25, 1859.

FRIEND TOLAND:—In the last number of the REPORTER, you gave notice of the formation of our Local Association and its proceedings up to that time. Please note now that it still lives, and with life gains new strength and vigor, and we confidently hope to boast of an organization which shall soon be without a rival. Such at least is our ambition, and I hope it will not be considered presumption in me to say we have the material to work upon and accomplish that end. We have held regular monthly meetings, and can assure our brethren in the East, West, North and South, that we will not leave a "stone unturned" for the promotion or advancement of our science. We wish to attract their attention because it may *possibly* be of some benefit to them, and I know it will be to us. One of our brethren in the west appears somewhat solicitous about the government of our association; be assured, kind sir, that our standard is high, and we will have a government, *second* to none. You may at some future day, be furnished with a copy of our Constitution and *By-laws*, also a list of the names of members. Wishing yourself and all our *professional* brethren in the Union, the greatest success and many happy New-Years,

I remain yours, &c., JUNIUS.

ANÆSTHETICS.

We quote the following article from the *Lancet*, for October 16, 1858, and have no doubt that all it asserts is true. Indeed, we have looked over the late Dr. Snow's work with much interest, and can heartily join in the recommendation of the *Lancet*, to give this "valuable monograph" a "thoughtful perusal." Notwithstanding all that is said, however, even by the highest authority, we believe the time is not far distant when chloroform will be abandoned as an anæsthetic agent. We again ask, why use an article of such uncontrollable power, when we have an equally reliable one in ether, and one which is entirely safe? It is notorious, that under the best conditions, and in the most careful hands, chloroform is a dangerous weapon. It is only lately that Mr. Erichsen, high surgical authority, has stated, both publicly and privately, that he uses chloroform as he would take an *express train*, ignoring, or risking, the danger of extra velocity. Now, is it not better to travel on the anæsthetic track a little more slowly, and be safe in our journey? Mr. Erichson himself intimates as much as this; and the evidence of every day only confirms us in the opinion we have expressed.

"The frequent recurrence of death from the administration of chloroform during the last few weeks, has induced a feeling of uneasiness and distrust of this agent both in the profession and out of it. It is very certain, however, that a great part of this feeling might very advantageously be transferred to the mode of administration which is still in vogue. It must not be forgotten that, in all these cases, the chloroform was administered loosely on a handkerchief, and in more than one instance, as has been proved, it was of a thickly woven texture, which did not allow of a free passage of air. This mode of administration is, we think, most unjustifiable. The experiment of the late Dr. Snow conclusively showed the necessity of carefully regulating the proportion of vapor in the air inspired. We strongly recommend to thoughtful perusal the valuable monograph on the subject of Anæsthesia which he has bequeathed to the profession. No one can rise from reading this valuable digest of a wide experience and the observation of ten years of scientific and practical labor, without a feeling of regret that so much carelessness should still prevail in the administration of this most potent vapor, and a sense of the necessity of a more extended instruction in the principles of anæsthetization. We commend the following sentences to the very careful consideration of surgeons:—

" The great point to be observed in causing insensibility by any narcotic vapor, is to present to the patient such a mixture of vapor and air as will produce its effects gradually, and enable the medical man to stop at the right moment. Insensibility is not caused so much by giving a dose as by performing a process. Nature supplies but one mixture of diluted oxygen, from which each creature draws as much as it requires ; and so, in causing narcotism by inhalation, if a proper mixture of air and vapor is supplied, each patient will gradually inhale the requisite quantity of the latter to cause insensibility, according to his size and strength. It is, indeed, desirable to vary the proportions of vapor and air, but rather according to the purpose one has in view, whether medical, obstetric or surgical, than on account of the age or strength of the patient; for the respiratory process bears such a relation to the latter circumstance, as to cause each person to draw his own proper dose from a similar atmosphore in a suitable time.'

" The proportion of chloroform most suitable to produce insensibility, Dr. Snow found to be about four cubic inches of vapor, or rather more than five grains of chloroform to one hundred cubic inches of air. With a properly arranged inhaler, it is easily possible to supply the vapor in this fixed position. This simple precaution would rob chloroform of nearly all its terrors and its dangers. It is a very surprising consideration, that while the niceties of surgical manipulation are invariably attended to with the utmost care, the production of anæsthesia is very frequently left in the hands of quite inexperienced persons. It is sad to see the issues of life and death treated with indifference; it would be yet more so, if we were not well aware that the fault is one of thoughtlessness, and that those who have fallen into it will probably shrink from a similar error now that it has been pointed out so forcibly by recent events."

FRACTURES OF THE LOWER JAW.

The use of Plates, in Combination with Gutta Percha, in treatment of fractures of the Lower Jaw.

BY A. W. ALLPORT, DENTIST, CHICAGO.

Editors of the Chicago Medical Journal:—In the August number of your journal, Dr. M. O. Heydock reported a case of fracture of the lower jaw, at its neck.

This was a case of peculiar interest, from the fact that it had been under treatment two weeks, and it was found that no ordinary bandages or appliances would keep it from swaying to one side; of course a deformity would have been the result of such practice. At the expiration of this time, Dr. H. called on me, with the patient, and I constructed for her two plates, as described in said report, which proved to be just what was required for the successful treatment of the case.

On the 19th of September, Mr. A. G. received a blow upon the right of the lower jaw, which fractured it through the median line. The case was seen by Professor Freer, who applied the ordinary bandages, used in such cases, but found it would be impossible to secure a satisfactory result in this way, and at once placed the patient in my hands.

When the case came to me, I found the right side of the jaw depressed about eight lines below the left, and the left, and the muscles acting with so much force, that it was found difficult to bring the two sides into position, so that the lower teeth would articulate with the upper correctly, and when in position difficult to keep them so.

With the aid of an assistant, the fracture was adjusted, and an impression taken in wax of the lower teeth, also an impression of the upper teeth, and from these, plates were swaged up, smilar to those used in the case of Mrs. H. These being brought into proper position on the teeth, were removed and soldered together. Thin layers of gutta percha, were then warmed in hot water, and placed inside of each plate and introduced into the mouth, as warm as the patient could bear; the jaws were pressed firmly together, until the teeth articulated perfectly, *through the plates,* which had been filed away for the free egress of the ends of the teeth, and were held thus uutil the gutta percha had been thoroughly cooled by the application of cold water. This done, the patient could not open his mouth, and of course the jaw was held firmly in place, which rendered union perfect, and a natural articulation of the teeth. The plate was removed on the 18th day.

In the case reported by Dr. Heydock, it was supposed that the separation of the upper front teeth, so as to admit of a bar or wedge being passed between them, from the plate on the lower jaw, was of service; but from this case it would seem that the wedge can be dispenced with, for the gutta percha insinuates itself into all separations, and adapts itself to all the irregularities and inequalities of the teeth, in such a way, that the patient can not move the lower jaw, and of course it is held firmly wherever it is placed, making this appliance equally serviceable whether the front teeth are separated or not.

The fact that the lower jaw hangs loose, and its mnscular attachments draw it in various directions, renders the treatment of the fracture of this bone far from being the simplest in surgical practice. In fact, I think that any experienced surgeon will bear witness to the correctness of the statement, that there have been as few cases of perfectly satisfactory results, in the treatment of fracture of the lower jaw, as in almost any other class of broken bones. But if the upper jaw be made the foundation, to which the lower jaw can be immovably attached, by the application of plates constructed as above mentioned, the treatment of these fractures can be made comparatively simple, and much more satisfactory.—*Chicago Medical Journal.*

The aplication of gutta percha in combination with the metal we deem a valuable suggestion and of practical value, as shown by the success of Dr. Allport in the foregoing case. We infer from the paper that it enabled the Doctor to dispense with bandages entirely, thus making a much neater and cleaner operation than in common. It also allows of perfect circulation of the blood of both systems, arterial and venous, which is a desideratum with all surgeons. We would advise the filing of this case in the memory where it may be had readily when needed.—*American Dental Review.*

THE SCIENTIFIC ARTIZAN.

A Journal devoted to Science, Art, Discovery, and Invention, published weekly,—price, $2 a year; $1 in advance; and $1 at the end of six months.

It is the representative of the American Patent Company, recently established in this city, and composed of respectable, wealthy, influential and scientific men. The paper contains, each week, a full report of all patents issued during preceding week, and is filled with interesting scientific information on almost every subject, and is therefore desirable and valuable, alike to the literary, scientific and professional, or the inventor, mechanic, and agriculturist,—each will be well repaid for its regular perusal; and those who have improvements, and design patenting them, will do well to consult the American Patent Company, before taking steps in the matter; they will thus be able to learn—1st, whether a patent can be obtained, 2d, whether it will be valid and can be sustained, and 3d, whether its merits will justify the labor and expense.

The following we copy from the first number, in which will be found something of the objects and aims of the Company:

"The American Patent Company proposes:—

1. To *procure patents* with the greatest possible dispatch, and the least necessary expense.

2. To *negotiate the sale* of such patents, as upon due testing prove to be worthy of public patronage.

3. To *test*, by actual experiment, the practicability and utility of all patents coming into its hands.

4. To *investigate Patent Claims*, so as to determine whether a discovery or application is patentable or not.

5. To *execute for inventors*, mechanical and other drawings, in the highest style of art, and with absolute correctness.

6. To *introduce new inventions* into general use, by presenting their claims through the columns of this paper.

7. To furnish the most finished engraving for the use of patentees at the lowest price.

8. To publish a weekly Scientific Journal, embodying all information pertaining to the patent business.

To make the objects of the Company perfectly clear, we beg to discuss briefly each of these separate departments, and to examine its claims to public confidence.

The Company is composed of gentlemen of well-known business capacity, and high reputation for integrity, possessing capital and influence. An examination of their names will show that these are not the men to engage in an illegitimate speculation. They have organized themselves under the law as a body corporate and politic, with all the rights and privileges usually accorded to such corporations. The capital stock is ONE HUNDRED THOUSAND DOLLARS, which will be increased if it be found to be necessary in the prosecution of its business.

THE VULCANITE BASE.

We have received a great many inquiries in regard to this style of work. We can now say that the trade is open for the Profession.

Two rival companies, the "India Rubber Company," and the "Gutta Percha Company." The former propose to sell vulcanizing machines and rights for $50, with a perpetual tax of one dollar on each piece of work that may be made. The other sells machines and rights at $100, being free from any tax whatever.

We have recently had opportunities of seeing a considerable quantity of this work; and the more we see of it, the better we like it, as it is light and elastic, congeniel to the mouth, and apparently perfectly impervious to the secretions.

For more specific information of prices, manner of doing work, etc., see advertisements.

LADIES IN THE DENTAL PROFESSION.

Dr. D. W. JOBSON, of New York, is making efforts to induce women to enter the Dental Profession, with fair hopes of success.

We heartily second the movement. Even now we almost imagine ourself seated in what is usually termed the "chair of torture"—dreaded now no more—by our side a beautiful lady, with sweet breath and glowing cheek, her delicate arm encircling our head, our cheek resting against a bosom still more soft, looking up into eyes, so tender in their gaze—they take away all dread, and in their sympathy even divide the pain itself. With such a dentist, we would want our teeth examined every twenty-four hours.

EVERY MAN HIS OWN DENTIST.

We have been favored with a copy of a neat pamphlet of 24 pages, bearing the above caption, which, as the title page informs us, is "A Treatise on the proper management of the

Teeth, with full instructions to preserve and keep them beautiful, to the most extreme old age, without the aid of the Dentist; with instructions by which to detect quack dentists, and the propriety of avoiding patronising the same. By H. H. Black, Surgeon Dentist." Price, 25 cents.

We have hurriedly glanced over this production, and find in it much interesting information and many valuable hints and suggestions, which, if properly applied, will go far toward the object aimed at; but we think the Doctor—in giving "instructions to *preserve and keep the teeth beautiful to the most extreme old age*"—claims a little too much—more than can be accomplished in one generation,—while much may be done. There is undoubtedly a large amount of caries induced by constitutional causes, transmitted from parent to child, which will require the coöperative skill of the dentist and physician, with the most vigilant care of parents, for several successive generations; but a beginning in the right direction can not be made too soon, the community can not become too soon nor too well informed on this subject. If it were the loss of the teeth ONLY, it would not be so bad; but comfort, health, and beauty are involved. No person can long enjoy either of those blessings, without good teeth. We hope this little Book will have a large circulation and be the means of doing much good.

SPECIAL NOTICE.

In an advertisement of MOSES DOLPH, on the cover, of "The Dental Lamp," the language gives a *false impression.*

The last article purchased from him was May 5th, 1857, and prior to that time, the goods were made expressly to my order, at specified prices. My name is, therefore, unnecessarily and *improperly* used, for A PURPOSE!

My arrangements since then are very SUPERIOR. Manufacturing by machinery in large quantities, I am enabled to *sell at* what it *costs* to manufacture by hand, and still make a HANDSOME PROFIT. For particulars, see advertising pages on Catalogues.

JOHN T. TOLAND.

THE CINCINNATI MEDICAL NEWS

Is the title of a monthly paper, edited and published by Prof. A. H. BAKER, M. D., of this city,—which should have been noticed in the November number, but was overlooked. This is a free, bold, and independent publication, and calculated to do much good in the profession, by exposing error and advocating truth. Generally there is too much disposition to "smooth things over." Give us the man who is always ready to "face the music," and such be believe Dr. Baker to be. We bespeak for the *Medical News* a large circulation. Price, fifty cents a year.

SHERWOOD'S FORCEPS.

For three years (viz: from January 1st, 1856), Mr. H. R. Sherwood has manufactured *exclusively* for me—all his work passing through my hands. At that date, there were about two hundred pairs of Sherwood's Forceps in market. Since that date, I have sold nearly $12,000 worth of his instruments, and can not get them made fast enough to supply the demand. Still I see advertisements of "Genuine Sherwood's Forceps," which I must acknowledge my inability to account for, unless it is the old shapes and styles made several years ago. Of these we have daily offers to trade or exchange, which we generally decline, because we want only the best of every thing; and in Sherwood's Forceps, such improvements have been made, that the *old* styles would not be *recognized* in company with the *new*, except by the *name*. John T. Toland.

THE DENTAL ENTERPRISE.

A monthly publication, bearing the above name, has fallen under our notice. It is an enterprise of rare merit; and we would advise all to subscribe. It is published by Henry Snowden. Price, fifty cents a year.

☞"*The Cincinnati Dental Lamp*"—Is the title of a new aspirant to *fame* and *wealth* in dental literature. We have not been favored by the publisher with a copy, but by *accident* obtained the November issue, Vol. I, No. 1.

From the prospectus we learn, that "the *Lamp* will be published quarterly and will be what its name imports," "*a light to dispel the darkness which hangs brooding over Dental Science.*" Truly, we trust the *Lamp* will be able to accomplish the *task* which it has assumed. The *Lamp* is neatly printed, on good paper, and filled with matter highly interesting to the profession. The intelligence, sprightly wit and humor of the Editor, Dr. J. M. Brown, are readily observed on every page.

The *Lamp* will be furnished to subscribers, for twenty cents a year. Verily this is *cheap enough*, those who can not afford to subscribe for the *Lamp*, deserve to remain in *darkness*.

We wish the *Lamp* success on its mission; but if the Editor expects a "liberal profession" to reward him for his labors, before his expectations are realized we fear he will have occasion to say with the poet—

> "The Lamp must be *replenished*, but even then,
> It will not burn so long as I must watch."
> But while the *Lamp* contrives to burn,
> The vilest sinner may return.

☞ *The Peninsular and Independent Medical Journal*—Devoted to Medicine, Surgery, and Pharmacy.

We are in receipt of several numbers of this valuable Journal. It is ably and independently conducted, by a highly scientific corps of Editors, and is calculated to effect much good by its independent tone and the large amount of practical and scientific information with which each number is laden. We bespeak for it a large circulation.

The *Journal* contains 64 pages exclusive of advertisements, and is issued monthly, at Two Dollars a Year in advance. Published by Higby & Stearns, 162 Jefferson Avenue, Detroit, Michigan.

☞ *The Lewiston Falls Journal* (Lewiston, Maine)—Edited by Nelson Dougley, jr.; is a valuable family newspaper, which deserves a large circulation and close perusal. We notice in it an article on "Popular Dental Knowledge," which we commend to attention of all readers of the *Journal*. This is a step in the right direction. Let the *people* be *educated* in the structure, value, *use* and *abuse* of their teeth, and Dental Science will rise to the dignity and importance to which it is entitled. For this result, we must depend on the medical profession and the secular Press.

APOLOGY.

Indiana State Dental Association.—We had the pleasure of being present on the 28th and 29th of December, at a meeting of the above named Society, in the city of Indianapolis, and were well paid for the loss of time and expense; indeed, it has rarely been our fortune to witness so much systematic business order, intelligence and harmony of feeling, in any gathering of this kind. Each man seemed to have come for *a purpose*, which he fully understood, and was earnest in executing.

The discussions were interesting and ably conducted,—the details of which we *expected* to publish in this number; but through some mishap of our friend "Perine," (which he can explain for himself), we have neither notes, mem. or report. We *loaned* our "*notes*" to Dr. P., to make up a report for the New York *Journal*, under promise of furnishing us with advance sheets by the 10th of January, at latest. We have waited from day to day, until the 10th of February, but no report cometh; we can wait *no longer;* as we have neither our own notes nor Dr. Perine's report, we must go to press without it, with the promise that the report will be found in the March number of the *Dental Register of the West*,—together with a report of the College Commencement, College Association, and Proceedings of the MISSISSIPPI VALLEY ASSOCIATION, all of which take place February 20th, 21st, 22d, 23d and 24th. The meetings of this Society are attended with much interest, and will well repay a visit from the profession of the neighboring States.

If the friends of the Indiana Association will forgive us this time, we will promise the like shall not occur again, as we have resolved to adopt a new principle in reporting, viz: "Neither borrow nor lend."

THE DENTAL REPORTER.

This closes the *first* volume of the *Dental Reporter*, as a subscription Journal.

When we commenced its publication, our aim was to be the *cheapest* in the world, and furnish fresh and reliable information on all subjects interesting to the profession; to which we expected a hearty and enthusiastic response, in showers of 25 cent pieces We thought every dentist in the United States, besides many physicians and others, would become immediate subscribers, so as to make a list of at least 10,000. Well, probably there are that many who would like to consider themselves subscribers to the "Reporter," but they forget this is a fast age—we can't wait, they have been too *slow*. Our list has not exceeded 4,000, which, at 25 cents, won't pay *first cost!* while others have started at 20 cents, 10 cents, and even 5 cent.

The *Reporter* has been devoted to the profession, not as an "advertising journal," for its pages have been kept free from advertising, except in a separate department, such as every literary journal, has annexed for advertising purposes.

If we can not be the cheapest and have the largest circulation, we are determined to be among the most respectable, and therefore concluded to take ourself out of *bad company*.

We had resolved to raise the price of next volume, to $1 a year, and have already received several subscriptions for the next volume; but within a few days, we have concluded to purchase the DENTAL REGISTER OF THE WEST, with its books, credits, and subscription list, and will hereafter be proprietor and publisher of the same, and will therefore abandon the *Reporter*, which will end its existence with its first volume. Those who have paid on the second volume of *Reporter*, can have the amount applied on the *Register*, or the money refunded, as they choose, by notifying us of their desires.

Drs. J. TAFT and GEO. WATT will continue as Editors of the *Register*,—the subscription price is $3 a year, in advance.

After the close of the present volume which will end with the June number, the *Dental Register* will be issued MONTHLY, instead of Quarterly,—and at the same price per year.

DENTAL REGISTER.

Having become proprietor and publisher of this highly respectable and popular Journal, I will cease the publication of the *Denial Reporter*, and devote myself to the interests of the the *Register*. Drs. TAFT and WATT will continue as Editors.

At the expiration of the present volume, which ends with the June number, the *Dental Register* will thereafter be issued monthly, at the *same* price as heretofore, viz: $3 a year, in advance, only that *advance* payments will be insisted upon. In changing from a quarterly to a monthly, both *labor* and *expense* will be trebled; but as the advantages to the profession are so apparent, I anticipate a like increase in the subscription list. All friends of the movement will at once see the propriety of exerting themselves to increase the circulation of such a Journal. Its communications, reports and selections will always be fresh and new—always in advance of every other journal. It will be issued and sent promptly, to all prompt paying subscribers.

New cash subscribers respectfully solicited.

Those *indebted* to the "REGISTER," will confer a favor by prompt remittance of balance due, as I wish to square up the old books, and start anew. JNO. T. TOLAND.

FRANCIS' GALVANIC AND ELECTRO-MAGNETIC PROCESS FOR EXTRACTING TEETH WITHOUT PAIN.

Office Rights, for the full term of the Patent, including complete apparatus, with instructions, will be sold for $60.

Those who have a Battery, will be furnished with a Right for $50.

JNO. T. TOLAND,
38 *West Fourth Street, Cincinnati, O.,*
Agent for the West and South.

GALVANISM IN EXTRACTING TEETH.

At the stated meeting of "Pennsylvania Association of Dental Surgeons," held December 7th, 1858, the Committee on Galvanism made the following report, which, on motion, was adopted:

MR. PRESIDENT: The committee appointed by the Association to investigate the merits of applying the galvanic current in the extraction of teeth, would beg leave to report, that they have attended to the duty assigned them.

Immediately after their appointment, the members of the committee were furnished with galvanic batteries, and instructed how the current should be employed, by the agent of the patentee. These bateries have been used, and the instructions followed by the committee in their investigations. Desirous of arriving at an impartial and unbiased opinion, and believing that this could only be obtained from a somewhat lengthened series of experiments, the committee have permitted several months to elapse before presenting their report.

Their experience, which has been gained in *private practice*, has varied from time to time. At one period, certain members were disposed to believe that they recognized in the application of the galvanic current, all that had been claimed for it, and all that had been said in its favor; but a later experience and more careful observation convinced them to the contrary. They have found that although in a certain proportion of cases they have had evident alleviation of suffering, and in some the assurance that the operation has been absolutely painless, yet that in the majority of instances, the pain of extraction has been unmitigated, and in some cases the application has been denounced as productive of the most excruciating suffering.

With the view of ascertaining how far galvanism was instrumental in alleviating suffering, the operator, when engaged in extracting a number of teeth for one individual, would occasionally intermit the current without apprising the patient of the fact. On being questioned relative to the sensations experienced, the answers were frequently, though not always, the same as when the current was perfectly established.

Therefore, while your committee does not feel warranted in positively condemning the use of the galvanic current, as an anæsthetic agent in the extraction of teeth, they can not, in justice to their convictions, give it that commendation which it has received from the hands of others.

Having discharged their duty, your committy would respectfully request to be dismissed from further consideration of the subject.

J. H. McQuillen,
J. Foster Flagg,
T. L. Buckingham,
Jas. E. Garretson,
C. N. Peirce.

H. R. SHERWOOD,
MANUFACTURER OF
DENTAL INSTRUMENTS,

Respectfully informs his friends and the public, that his connection with Dr. J. M. Brown ceased on the 1st day of January, 1856; therefore all instruments sold by Dr. Brown, or others of my make, requiring repair, must be sent to ME, PERSONALLY, or to

JOHN T. TOLAND, No. 38 WEST FOURTH ST., CIN.,
Who will hereafter have the exclusive sale of instruments of my manufacture and to whom all orders should be addressed.

Forceps, Pluggers, and Scalers, and all other Dental Instruments of any required style or pattern, made promptly to order and warranted.

Instruments repolished, repointed, and repaired, and all kinds of Jobbing executed at short notice, and on reasonable terms.

H. R. SHERWOOD,
Manufacturer of Dental Instruments, Cin., O.

S. WARDLE,
DENTIST

Would say to the Profession that he is still prepared to do all kinds of
MECHANICAL DENTISTRY,
ESPECIALLY BLOCK WORK.

In the very best manner, and at the shortest notice. He also furnishes MATERIALS OF THE BEST QUALITY to those who wish to put up their own Blocks, or Continuous Gum Work.

Office and Residence, 142 W. Fourth St., bet. Race and Elm, Cincinnati, Ohio.

☞ N. B.—Specimens of Block Work can be seen at TOLAND'S DENTAL DEPOT, No. 38 West Fourth Street, Cincinnati, Ohio.

THE ECLECTIC
COLLEGE OF MEDICINE,
CINCINNATI, OHIO.

Two Sessions are held annually. The Winter Session commences about the middle of October, and the Spring Session early in February, and continues sixteen weeks.

A full and thorough course of lectures will be given, occupying six or seven hours daily, with good Clinical instruction, in Commercial Hospital.

The arrangement of the Chairs is as follows :

T. E. St. JOHN, M. D.,
Professor of Anatomy and Physiology.
J. F. JUDGE, M. D.,
Professor of Chemistry and Pharmacy.
A. J. HOWE, M. D.,
Professor of Surgery.
C. H. CLEAVELAND, M. D.,
Professor of Materia Medica, and Therapeutics.
WM. SHERWOOD, M. D.,
Professor of Medical Practice and Pathology.
J. R. BUCHANAN, M. D.,
Emeritus Professor of Cerebral Physiology and Institutes of Medicine.
JOHN KING, M. D.,
Professor of Obstetrics and Diseases of Women and Children.

The Terms for the Session,

Will be the same as heretofore, viz :—Matriculation, $5,00. Tuition $20.00. Demonstrator's Ticket, $5.00. (Every student is required to engage in dissection one Session before graduation.) Graduation, $25.00.

The Lecture-Rooms

Are newly finished, neat, and comfortable, and in a central locality, (in College Hall, Walnut Street,) where students will find it convenient to call on their arrival.

Tickets for the Session

May be obtained of the *Dean of the Faculty*, at his office, No. 85 Eighth Street, or of Prof. C. H. Cleaveland, *Secretary of the Faculty*, No. 139 Seventh Street, near Elm.

JOHN M. KING, M. D., Dean.

THE COLLEGE JOURNAL OF MEDICAL SCIENCE.
A Monthly Magazine of 48 Pages,

Conducted by the Faculty of the Eclectic College of Medicine, is published at One Dollar a Year, payable in advance. The volume of the Journal commences with the Year. Communications for subscription, or for specimen numbers, should be directed to Dr. C. H. CLEAVELAND, Publisher, 139 Seventh Street, Cincinnati, Ohio.

THE DENTAL REPORTER.

VOL. 1. FEBRUARY, 1859. No. 4.

PHYSIOLOGICAL OBSERVATIONS ON THE TEETH.

BY PROF. T. E. ST. JOHN.

THE CAUSES OF DECAY.—One of the greatest evils that "flesh is heir to," is the tendency to decay of the dental organs. Why is it? What induces this premature degeneration in structures that for hardness and density are not surpassed by any in the body? It is a lamentable fact that scarcely one in ten of the human family arrive at the age of maturity, without suffering more or less the tortures of decayed and decaying teeth. It can not, certainly, all be attributed to the faults and excesses of the parent. It can not be supposed that the present generation are so exempt from misdemeanors or transgressions, as to be compelled to suffer the penalties of *hereditary* diseases alone. No, there is a cause; in fact it might be said there are many causes for this most distressing ill of the human subject, that can not be referred to any circumstances existing previous to the birth of the sufferer. I have before noticed the best means calculated to induce and maintain a healthy denture, and it is the object of this paper, to consider the *causes of decay* in the permanent teeth.

These are various, if we are to believe the assertions of different writers upon the subject. Thus, acids, alkalies, climatic influences, the mode of living, the use of sugar, uncleanliness, etc., etc., are presented as a few of the prolific causes of this malady. In noticing the effect of these upon the teeth, I shall endeavor to ascertain how much they are entitled to the censure they have received at the hands of the writers who have spoken of their demerits.

Acids.—Dr. Rossi says, that the change in teeth known as caries, is a *chemical* phenomenon, and is due to a single cause; the action of *one, or several acids*. In examining the composition of the tooth, it is found to contain considerable quantities of alkaline earths, which are capable of combining with various acids, when they are placed under favorable circumstances. All acids are not capable of acting upon the teeth, neither is the effect of those that are injurious, similar in all cases. Acids may be present in the mouth from a number of sources; they may be secreted by the subject, in the saliva and the buccal mucus, especially if the individual be affected with any disease of the salivary glands, or even when suffering from any constitutional malady, the secretions may be so changed in quality, or character, as to become corrosive, or destructive to the teeth, from the excess of acid they may contain. Acids may be introduced into the mouth with the substances taken as food, or may be taken alone, either as drinks or medicines. Particles of the food will remain in contact with the teeth, because of the absence of ordinary efforts of cleanliness, a sufficient length of time for decomposition or putrefaction to take place, which will generate acids in considerable quantities, some of which may be peculiarly active, producing their deleterious effects very rapidly.

It is not to be supposed that a solution of any ordinary acid of the strength in which it is found in the mouth, will materially effect the sound tooth, but if by mechanical violence or other means, the outer coating of enamel becomes removed, it will be observed to act with considerable energy. It is a common remark of all who have any experience in the matter, that when the cavity is once formed, the tooth soon becomes worthless, from the rapid increase of the carious portion.

An examination of the positions of the decayed part would indicate that the decomposition of food and consequent formation of acid was one of the most common causes of caries. It is found on the approximal surface where the material may easily accumulate; it is also found upon the top of the crown in the depressions where the enamel is developed in small quantity.

There are certain conditions of the dental structure, that favor the destructive action of acids, which come in contact with them, viz: the quality of the dental structure, which from the presence of disease in the subject, or from an hereditary taint which may exist, owing to circumstances mentioned in the previous article in the REPORTER, upon the means of *securing* good teeth. The form of the teeth may favor the accumulation of foreign substances, by having a number of large depressions, or being placed in the dental arch in an awkward and irregular manner. Mechanical injuries, such as will result from the use of metalic tooth-picks, the abuse of the teeth by cracking nuts, biting off nails and the like, favor the action of the acids by injuring the enamel and thus allowing them to come in contact with the less protected portions of the tissues.

Thus it will be seen that there are many circumstances existing, which would favor the action of acids upon these organs. Is the presence of this substance injurious? If a tooth be macerated for a short time, in a weak solution of nitric, sulphuric or muriatic acid, it will be found to present the appearances of decay, the tissues will become colored or broken down and disintegrated. About the same result will follow the action of many of the vegetable acids. It is now acknowledged by all who have given any attention to this subject, that acids are the most destructive agents that come in contact with the teeth; and that a large proportion of the caries affecting these organs, is referable directly to acids as the cause.

ALKALIES.—There are some who attribute dental degeneration to the large amount of alkalies that are used in food, at the present day, as saleratus, soda, etc. That deleterious effects upon the health of the individual may arise from the excessive use of these substances, no one will deny, but that they are peculiarly destructive to the teeth, is by no means probable, as may be proven by observation and experiment. The natural condition of the mouth, or of the fluids by which the teeth are surrounded in health, is alkaline, and it can not be supposed that a healthy secretion, normally formed and given off for the use of the animal economy, would have an injurious effect upon those structures with which it is continually in contact. If the tissues of the tooth be macerated for a long time in a strong solution of potash, no very marked effect will follow, certainly none like those which characterize the action of acids. May it not be supposed then, that these substances are not as injurious as many have been induced to believe; and if they have a degenerating effect, it is of a secondary nature, rather than primary; that they affect the dental tissues in common with other structures of the body, by interfering with the general health of the subject, and impairing the vital processes of secretion, assimilation and nutrition. It is true that statistics are presented to show that decayed and decaying teeth have been alarmingly on the increase since the introduction of saleratus as a common article of diet, but do they prove that the use of this substance is the cause of the malady? Is it not mere assumption? Could not statistics be obtained to show that intermittent fever has increased in this country, in as great a proportion since that time, as caries in the dental organs; and yet, who would argue from this alone, that they stood in the relation to each other as cause and effect? Even if the alkalies are injurious to these organs, it is never the case that they are applied in suffcient strength, or for a sufficient length of time, to produce any result whatever, and it is highly probable that under ordinary circumstances, no deleterious consequences follow their use. This is indicated by the chemical composition of the teeth, as well as by observation and experiment.

The Influence of Climate and Mode of Living.—As regards the influence of climate in hastening decay, but little is known, and that is mere hypothesis. It has been argued that persons coming from the old country generally have good teeth, but very soon after their arrival in this country, the teeth begin to decay. Is this not really owing to the manner of living rather than the climate? The aborigines of this country universally have good teeth. They live more in accordance with the laws of health than do the amalgamated mass that forms the

American people. We are continually striving to ape the vices, fashions and follies of the old world, without paying heed to their virtues, and as a consequence we enjoy the reward. The constitution is broken, the vital forces impaired, and in common with the other portions of the body, the dental organs are undergoing a process of degeneration, which will, ere long, leave its mark as well upon the intellectual faculties of the sufferer, as upon his physical organization.

SUGAR.—It has very frequently been asserted that the free use of sugar, tended to premature decay of the teeth, but at present this is rendered untenable, by the known action and influence of this substance; it being rather in an opposite direction tending to prevent instead of promoting degeneration of osseous structure. This is acknowledged by all physiologists and arguments are unnecessary. It is the principal ingredient in the food of the individual for a considerable period of his early existence, at a time, too, when these dental organs are being formed.

UNCLEANLINESS.—This is a matter to which it is the duty of every dentist and physician to call the special attention of his patients and friends. It is, indeed, the cause of all causes of premature decay. It is by uncleanliness that deleterious and obnoxious substances are allowed to remain in contact with the dental tissues, contaminating not only the teeth, but the health and life of the subject, by the foul odors that are being constantly emitted as the result of their decomposition and decay.

Persons may occasionally be found, who, for a number of years have paid no regard to cleanliness of the organs, and yet, never suffered from decaying teeth; but these are the exceptions, and not the rule, they can not be regarded as arguments in favor of uncleanliness.

In the bar-room of a small public house, in a country town, was once congregated a company of young men, enjoying the passing hours over a glass of the best "Bourbon," when an old man well known to them all as "Old Porter," joined them. "Old Porter" had for many years been the sexton of the village graveyard, and withal was an inveterate drinker. As he came in, one of the company proposed to drink the health of the old man, remarking that "Bourbon could do no one any harm, for Old Porter had drank it all his life and was then a hale and hearty old man." The old man turned abruptly to him, and requested that he walk to the churchyard. When there, the old man said, "Harry, your jesting remark brought back to my memory many a bitter thought; look there, and there," pointing to a number of graves, "I started in life with a number of

young men whose prospects were as bright as yours—we drank together, enjoyed our gatherings over the social glass, as merrily as you do now; but they all are dead, and each fills a drunkard's grave. I, alone, am left. My case is not the rule, but the exception." But to the subject—we can not suppose that because one individual has reached an adult age, with perfect teeth, although he has not given any attention to the cleanliness of those organs, that others may do the same. But I have already made this article too long. What are the remedies for this degeneration? I have but one or two to present: the first, and most important is cleanliness, entire and absolute cleanliness of the whole mouth, and especially thorough washing after each meal. By this means any particles of vegetable or animal matter that may have lodged upon or around the teeth, will be removed, and their injurious effects prevented.

It will be seen by reference to the adjoining cut, that a space of greater or less dimensions exist between the teeth, into which the noxious material may easily lodge. The indentations upon the crown are not so readily seen in this representation, but any one can obtain a view of them by examining the living specimen which he carries with him. The accompaning *original* engraving is taken from a beautiful specimen, belonging to Mr. Toland, of this city; it represents, very accurately, the nervous filaments and vessels passing to the teeth, both of the superior and inferior maxilla. Reader, stop and examine it carefully. You will observe that each tooth has *five* sides, three of which may be reached with the brush—the other two, (the approximal surfaces,) must be cleansed by means of a slip of silk drawn between the teeth.

If there be a cavity, however small, have it filled; as long as it remains, it provides a resting place for a quantity of decomposing matter, which increases the decay, and taints the breath with foul and disagreeable odors.

TREATMENT OF DENTAL PULP.

Mr. Editor:—If you think the following observations upon the treatment of the dental pulp, worthy a place in your very excellent "REPORTER," you can publish them; if not, you are at liberty to dispose of them as you see proper.

Whether the dental pulp, after exposure, can be preserved in a normal state, depends not only upon *its* condition of health, but also, very much upon the *bodily* condition of the patient. If the patient possesses a strumous diathesis, or is suffering with dyspepsia, or any intestinal derangement, the chances of success are very uncertain.

When I find the nerve and its investing membrane exposed, but in a healthy condition, and the dental arch of the patient fully developed, the gums healthy, and no predisposition to arterial excitement, I have no fears in regard to its successful treatment.

For a number of years it has been my practice to treat the exposed nerve, preparatory to filling, with a mixture of tannin and creosote. Latterly, I have been using glycerine in place of the creosote, and in many cases deem it preferable. In introducing the filling, the foil should be so packed, as not to press too hard immediately *over* the exposed nerve, (the pressure is to be feared;) at the same time the filling should be made solid, and *thoroughly* compact around its edges, where it joins the parietes of the cavity. In many cases where the dentine is very sensative, and will not admit of proper excavation, I use temporary fillings, which, after remaining in six months, I have removed, and invariably found that nature had been making efforts to protect herself against the encroachments of the disease, by consolidating the dental tubuli. I have very little faith in indiscriminate "nerve capping," although have used a horn cap in some few cases, where it was thought necessary.

But when the nerve is inflamed, and *these other conditions* unfavorable, I find it utterly futile to rely upon preservative treatment; but always destroy it, either with an instrument or an escharotic.

The former method is always preferable; but when the tooth and other circumstances will not admit of my using an instrument, I then use the following escharotic:

℞.—Morph. Sulph. xx grs.;
Arsen. Acid, xxx grs.;
Ole. Caryophyl., q. s., misce.

The oil of cloves is far more preferable than creosote, being less unpleasant and more agreeable to the olfactories of the patient. A small bit of this mixture of the size of a pin's head should be applied *in contact* with the exposed nerve, and the cavity filled with wax, and let remain for twenty-four hours. One application is generally sufficient. A proper opening should now be made into the cavity and all the decayed and dead pulp removed. Should there still be a tenderness in the fang or fangs, it is best to fill the cavity with cotton, moistened with spirits of camphor, and let the tooth rest for a few days. By this time the little remaining vitality of the nerve filaments will also be destroyed, when the balance of the nerve can be removed down to the apex of the root. After applying a solution of tannin in glycerine, and thoroughly washing, the roots and cavity are prepared for inserting the filling.

Should the operator neglect to remove all the pulp, but merely *wall it in* by the filling, it would be very apt to lead to inflammation of the alveolo-dental periosteum, terminating in alveolar abscess, and probably requiring the extraction of the tooth.

In the treatment of the dental pulp, like in all other operations in operative dentistry, it requires of the intelligent dentist, more than a mere *routine* system of therapeutics—he must be "eclectic," exercise his judgment, and use such remedies and means as the nature of the case demands.

Middletown, Md., Dec., 1858. J. P. H. B.

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MR. EDITOR:—Having kindly solicited me to contribute a communication for the next number of the *Dental Reporter*, I herewith cheerfully comply with your request. Deeming the following cases not entirely void of interest, I transmitted them in *part* to the *Dental News Letter*, (if my memory be not at fault,) in the early part of 1855. But unfortunately quite a number of errors crept into the publication. The fault, however, in all probability, was my own, as I carelessly wrote the article in pencil.

If you coincide with me in regard to their worth, then give them publicity; if not, consign them to the flames. At some subsequent period, you may hear from me again, relative to some inventions, improvements, etc., which I have effected, pertaining to the dental laboratory.

For the Dental Reporter.

SINGULAR PHENOMENA—REPRODUCTION OF THE ENAMEL, &c., &c.

Throughout my researches in the pages of dental history, I have met with nothing that resembles the following curious phenomena. And I trust their apparent incompatibility with received views, will *not* stand as a barrier to the investigation. Whether they will prove to be of practical value, remains yet to be ascertained. But they at least are interesting as physiological facts, and may be the means, not only of casting much light upon the subject, but add also to the literature of Dental Phenomenology. Freely do I confess my inability to assign the causes of these strange freaks of Nature, and therefore submit them to the dental profession, without comment.

CASE 1. Philadelphia, March 12, 1855. Miss S. S., a lady of my acquaintance, aged about twenty years, of sanguine temperament, had, early in life, used a great deal of medicine, the result of which was, the entire destruction of the enamel of all her permanent teeth, while upon the bone or ivory, not the slightest traces of its ravages were visible.

And strange as it may appear, the enamel is again for several years past, being gradually deposited upon them; some of which are now entirely coated over, while others are but half or two-thirds. The formation of this enamel commenced at the *necks* of the teeth, and not at their *cutting* edges, as is usually the case. It is very beautiful in quality, exceedingly white, and of unusual thickness.*

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* Some year and a half after the above date, I again visited the city of my nativity—saw my friend Miss S. S., and found the *deposit* still slowly, but gradually progressing.

Case 2. Miss H. L. R. of W——t, New Jersey, aged seventeen, of a healthy appearance, consulted me July 20th, 1856, and presented the anomaly of having no superior lateral incisors. Yet in other respects her teeth were entire and well formed. On inquiry, I ascertained that her grand-mother, previous to marriage, had lost both of her lateral incisors; and that neither the father of H. nor herself have ever had them, either deciduous or permanent.

Wm. W. Morgan.

Somerset, Jan. 3d, 1859.

Dover, Del., Nov. 3d, 1858.

Dr. Jno. T. Toland:—Having promised you an article for your *Reporter*, I now furnish you, upon a subject entirely new.

For some time past I have been using the galvanic battery for extracting the "*nerves of teeth without pain*," having originated with myself. The attachment is made in the same way as that in extracting teeth. One pole being applied to the excavator or broach, the other to the patient's hand, and of strength sufficient not to feel too unpleasant, and you can cut away *without the least pain*, and extract the whole of it in a few minutes, without the previous use of arsenic or any other escharotic. In this manner of proceeding no inflammation is set up, to cause suppuration or ulceration at the root. The nerve is cut off like any other part, and after done bleeding, the use of any astringent, (pure Tannin is best) the parts heal, and no danger is apprehended as with arsenic. Thousands of teeth may be saved in this way, that will defy every other method, and that *without pain*. No fear need be entertained of it; you can cut in on the nerve, and no effort will be made by the patient to resist you. The only unpleasantness is that of the battery, which should not be too strong.

My object is to give it to the profession, and if successful, all I will ask, is, to be rewarded by small compensation, instead of securing it by *Patent*.

You will please give this an insertion in your *Reporter*, if not too late, or give, at least, its substance. If too late, report it to the profession verbally from your Depot, and let me hear from it. As to its success no fears are entertained by me, for I know it will do ; nor need the practitioner fear to make use of it.

I am the sole originator, and the world is welcome to use it. No patent binds it to any one. Be certain in every case, that all the nerve is gone from the tooth and roots, and I'll guarantee success in every case.

Excuse my haste and oblige

JOHN G. A. BONWILL.

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DESTROYING THE NERVE AND FANG FILLING.

BY JOSEPH MANSFIELD, OF NILES, MICH.

Read before the Michigan State Dental Society, at its 4th Annual Meeting, held in Detroit, Jan. 11th, 1859.

I always destroy the nerve when exposed. I have tried capping; it is with but poor success. I lose one out of four in capping.

Take arsenic, one part, morphine or tannin, one part, make it into a thin paste with creosote, then take a piece of small cotton twine, cut it into very short pieces, put it in your paste, cork it up tight and let it remain until it becomes well steeped in the paste; take out your cork, let it evaporate until it becomes nearly dry before using. One piece of the twine is sufficient to destroy the nerve. (I do this to prevent getting it on the gum, and it is much easier to get into the cavity.) I direct my patients to be sure and come the next morning, and have it taken out—(if at a distance, to take it out themselves.) If the patient is young, from 12 to 16, don't let it remain over 8 or 10 hours. I now partially cleanse the cavity. If not too sensitive, I prick the nerve so as to cause it to bleed, (I think this quite essential,) then I put in a small pledget of cotton saturated with creosote, let it remain from 2 to 4 days, and repeat it from time to time until the soreness has left, then clean the nerve and crown cavity thoroughly. I usually take a small drill and drill the fang as far as I can, then introduce a small piece of cotton saturated with creosote into the fang, stop the cavity with wax or cotton, let it remain from 2 to 3 days, if no soreness, then fill the fang and crown cavity. If there is soreness repeat the creosote.

I have on my note book 17 teeth treated in this way from the 21st of January to the last of February, which I have seen or heard from within a few weeks, and are doing well and perfectly satisfactory to the patient.

I filled 10 teeth during the same time, where the nerve was dead; some discharged through the fang and a part through the gum, which are all doing well. These I treated with caustic, chloride of zinc, and creosote. In the first place I take a small piece of caustic, crowd it as far as possible into the fang, stop the cavity with cotton; if the discharge is through the gum, I take a stout gum lancet and cut through the gum to the fang of the tooth; at the orifice of the discharge put in a piece of caustic. I order my patient to come the next day, then partially clean the fang and crown cavity; after this I use creosote mostly, sometimes cloride zinc. Treat in this way from two to four weeks, as the case may require, then introduce cotton saturated with strong creosote far up into the fang. Then fill with temporary filling, (I have used the New York Tooth Manufacturing-Co's polishing sticks, made of gutta percha and silex,) let it remain in from two to six weeks, then fill the fang. If you think filling the crown at the same time will be likely to produce inflammation, defer it for a few days.

I do not lose one front or bicuspids tooth in twenty with this treatment, in destroying nerve or where it has died from exposure.

You can not treat molar teeth with the same success from the fact that it is more difficult to thoroughly cleanse and fill the fangs.

ELECTRICAL ANÆSTHESIA.

BUFFALO, N. Y., Dec. 15, 1858.

JOHN T. TOLAND,—

I sent you a letter a few days ago, requesting you to withdraw my advertisement for the present. And now, I am on this subject, it reminds me that there is a strong prejudice in the Dental Profession averse to patents, which is very absurd until the Profession are pre pared to pay a man for years of toil and outlay. Bah! I have no patience with such twaddle. Just see how the Profession have sustained me. I claim to be the original discoverer of the Electrical Anæsthesia, and applied for a patent, intending to charge Dentists $20 for office rights, and *give* the *surgical* part of it to the world. Another person, it seems, by *some means*, obtained a patent ahead of me. I considered, (by advice of counsel,) that it would be best to withdraw my claim. I did so, as I was not prepared to litigate; it is proved that my process is far superior to the patent, and *yet, although* I have advertised in two Dental Periodicals to sell a Book of Instructions of the *best mode known* of using Electricity in Dental operations, *for One Dollar*, I have *not sold Books enough to pay for the advertisements.* I should like to have some person devise a process by which the discoverer of a new fact in science appertaining to Dental practice, (which *is* really *useful* and *new*,) may have some prospect of being paid a moderate compensation for his outlay of time and money. Honor or Fame is poor substitute for Bread and Fuel, at this season of the year at any rate.

Allow me to suggest, also, that inventors as a class are invariably poor, and such being the case, fame is a poor substitute for what they ought to have.

It appears to me the owner of the patent has fared worse than I have. One reason I suppose is the process does not work well. My advertising has brought a host of letters from all parts, full of frivolous questions, the most of them aiming to obtain the mode of operating by letter, and thereby save the dollar charged for the pamphlet, many of these minus a return stamp. I am sorry to say it, but it really seems to me the Profession will pay for anything that is new and useful if they can't help it. You asked me for a short dissertation on Electrical Anæsthesia! here it is—you may publish it if you please.

I am, sir, with great respect, your friend,

W. G. Oliver.

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FINISHING, FILLINGS, ETC.

BY A. F. ENNIS, PLYMOUTH, N. C.

Editor of Reporter—*Dear Sir*:—I send you a few ideas important to every member of our profession to observe, if you find them worthy of insertion, they are at your disposal.

The necessity of great care in completing the process of filling after consolidating a plug, all will admit.

There are many good operators who are neglectful in this most important and (as I conceive) indispensable duty, of thoroughly burnishing fillings, until they present a high polish and luster sufficient to reflect your image. The most successful operators in dental surgery in America, among whom I will mention, Professor C. A. Harris, of the Baltimore College of Dental Surgery; the lamented Dr. John Harris, deceased; Dr. Badger, of Nashville, Tenn., and a host of others were particular in regard to this item, and, indeed, I esteem the proper finish a sine qua non, upon which the future success depends. What would you think of a cabinet maker who would offer to sell you a roughly dressed piece of mahogany furniture. The furniture may be well put together, but lacking the finish—it tells unfavorably upon the workman. Likewise, a filling may be well put into the cavity and properly consolidated, but without the finishing stroke, characteristic of the accomplished artizan, the eye is not pleased. I have often observed a negligence among some operators in this particular, and, therefore, I wish to jog the memory of members of the profession to the importance of doing what they do, in the most thorough manner. An half hour can not be better spent than to condense, consolidate and burnish, until a high finish is obtained on a filling—it will amply repay the operator, and speak volumes toward the adornment of his path in life. The same care is essential in completing other operations; for instance, after separating, use a worn-out file or emery paper and polish. These, though small items, are indispensable steps to success. Particles of food are prevented from lodging on the surface of the enamel or dentine, and the tooth is secured against further decay, when well filled, provided the patient observes proper care in keeping the surface clean, hence, dentists should direct their patients to use floss-silk to cleanse the teeth.

The dentist can not be too particular after removing salivary calculus, to apply crocus, pummice-stone or other polishing powder, to leave a high polish. This course removes all traces of scratches, roughness, or particles of tartar that adhere to the enamel, and causes a highly polished, natural glazed surface which does not favor the accumulation of calcarious deposits. If the patient will follow the advice of his dentist, in observing the rules of dental hygiene and therapeutics, he will not fail to enjoy the luxury of a good Dental Organism.

Acids should, under no circumstances, be used about the natural organs, in our practice.

* * *

The following lecture was delivered Dec. 23, in the Ohio Dental College, Cincinnati, by Albany Packham, D. M. C. (at the hour which should have been occupied by one of the Faculty, but who failed to "come to time,") wherein he faithfully portrayed the several peculiarities of the profession: for instance, the round, soft and *repeating* style of Chapman; the excited, quick, railroad speed of Taft; the clear, smooth, plain, yet forcible manner of Watt; the grand and sure originality of Richardson; the loud tone, and gesticulating action of Smith; the dignified and stately grandeur of Taylor.

GENTLEMEN:—You have requested me to deliver before you a lecture upon Mrs. Partington, but having studied the *classical* languages in preference to my own, I am afaid you will not understand *my* English, so as to appreciate my lecture, if I deliver it in that language; still, if you will overlook my imperfections of speech, I will proceed. (Go on! Go on!)

Gentlemen, go-a-head it is, then—I am very glad to see so many representatives of the Partington family present—I will, therefore, make a few brief remarks about myself before I proceed with the Old Lady. In the first place, I am like unto a rolling stone which has gathered no moss, for I have been rolling from place to place, till I have nary-a-moss sticking to me. Let me then, impress upon your minds, the absolute necessity of locating yourself in some likely spot, where human pearls are scarce, and stay there if you want to gather the moss. I started in life with as fair a prospect of success as any one of you now present, but I wandered from place to place, until I have traveled upwards of six thousand miles, and spent upwards of three thousand dollars, then I could not roll my stones any farther. Gentlemen, when you are once settled and doing well, yet think you can do better by *shifting* your shingle, don't do it! but think of me! and my word for it, you will stay—that is, if your neighbors will let you. (Cheers.)

Gentlemen, This, I believe, is the only instance when an honor like the present, has been conferred on a janitor, lecturing (by the request of, and before the class) since the time when Aristotle, Esculapius, and the ancient faculty used to lecture before the students in the shady groves of Athens, Rome and Greece, for the janitor's duty at that time was to sweep up the fallen leaves, for the students to sit upon, and also to keep the nurse girls away. This, I say, is an honor never before conferred upon a janitor, and as such I thank you, not in the common slang of the day, (from the bottom of my heart,) for I believe my heart knows nothing about it, but I thank you, gentlemen, from the center of my brain. (Cheers.)

There is something about me that pleases you, else why this kind notice, which each of you have always shown me, others also, have been struck by my classical appearance, for during last summer, while my friend, Dr. Ruth, there on my right, had charge of the Infirmary, a lady came *in* to have a tooth *out*—she was placed in the operating chair—she was very nervous—for seven times did he take the forceps and approach her capacious aperture, containing the masticating machinery, and seven times did she close it with a sound like that of a snapping-turtle, suddenly she caught a glimpse of your humble servant, her eyes brightened up instantly, at my prepossessing appearance, and pointing at me, said if the *professor* there will hold me *in* I will have it *out*. I did as the lady requested, and the doctor extracted a three legged stool, which I suppose a cow had previously kicked there, when she was milking. At another time, that very nice, ancient but ignorant old lady, Mrs. Partington, came to the College, with her young hopeful son Ike, and wanted to know if I was not the professor, over all the Faculties. I did not deny the soft impeachment, but nodded my head in the affirmative—she said, that seeing our printed circulars scattered all over creation, wherein it stated that all those applying for work at the Infirmary, would be treated with all the kindness and respect that they would receive in a private office. I said certainly, madam, it's so! She then wanted me to *give* Ike a job of work, and five dollars per week. I explained to her the mistake she was under, by stating we expected patients to give us a job of dentistry-work. She then wished to know if Ike was disqualified to learn dysentery. I told her I could soon tell her, by examining him in arithmetic and geography. She told Ike to stand up, put his hands behind him, and answer me like a man! I asked him what addition meant? Ike said applying the battery in pulling a *fang*, in addition to the screw forceps, (good!) What does multiplication mean? He promptly replied, multiplying the pain in toothache, by the application of Dr. Branch's Patent Salt and Ice Bag, (good again.) What is division? He replied without hesitation, dividing the jaw, while extracting a tooth, (good again.) I asked him only one question in geography, and that was how far he expected his practice to extend? He said he would not be content unless his practice extended from the frozen ice-burghs of the North Pole to the warm-hearted sunny south, and from the eastern land of nasal-twangs to the other side of the setting sum. I turned to the anxious mother and said, Ike's examination proved him disqualified to study dysentery, and as she was very anxious to see him try his hand. I told him to commence operations, (she whispered in my ear that Ike had one operation that morning,) by extracting a canine tooth, he looked in his Latin for the word *canine*, then darted into the street after a dog, returned and placed it in the operating chair, seized a forcep, asked the poor brute if he would have the battery? He barked out, no! as plain as bark could. He then asked it to have Dr. Branch's Patent Ice and Salt Bag? (Applause.) A bark and a growl, so savage was the answer, that Ike dropped the forceps in alarm, and the brute escaped. I informed him it was not dog teeth I meant when I said canine. He looked at me with his nose turned up, in derision of my ignorance, and muttered something about my knowing nothing about Latin. I handed him a skull and told him to extract the cus-pidatis. Poor Mrs. Partington, with tears in her eyes, exclaimed in a rage, (her voice hissing like a hot casting, thrown into the water,) Ike shan't *detract*, nor *cuss-his-daddy*, for he was a good daddy to him, and died when he was only two months old—I mean Ike was two months old, and not his daddy—and before I could explain, she put up her spectacles, and dragged her young hopeful out of the College, in disgust with dentists in general, and dysentery in particular. (Cheers.)

Gentlemen, one of the junior members of the class, told me in confidence and friendship, that Mrs. Partington was really dead, and not to make myself ridiculous by saying she came into the Infirmary. Gentlemen, there are a few more left, and a great many son Ikes, and that young man just mentioned is one, and unless he greatly improves, he will do worse than his name-sake did with his dog patient. Why, every town in the world has a Mrs. Partington in their midst, any one of you (if you except that young man, for he did not know his own mother) can always distinguish the old lady from the rest of the human family, by these few peculiarities—she invariably confounds verbs, moods and tenses, calling things by the wrong names, and giving the most absurd pronunciations to words—she is a kind, good, motherly old soul, her hand in her pocket at the first sigh of distress, either real or imaginary, it's all the same to her, (the reason there are so many professional beggars, is because there are so many Mrs. Partingtons,) she always wears spectacles, and when excited, loses them sure, she then commences searching for them in her bureau drawers, inside of her Bible, in her work basket, in her pocket, and even in her button bag, at last finds them above her nose, but *knows* nothing about them, until told of the circumstance. Mrs. P. never was guilty of giving her son a clean shirt to put *on*, having a button *off*, neither does she give him his stockings with a hole in them, except the one he *put his foot into*, (nothing personal, gentlemen, although we all know some of you had a *hand in it* the other day,) she is also very firm and headstrong in her belief of whatever she has set her mind upon, for she still insists that her son Ike was subject to the *inflatation* of the *growels* every time he went to see the *inflammation* of the balloon, and when he was undergoing the painful operation of cutting his *cotemporary* teeth, he had fits and *revolutions*. Such then is Mrs. Partington, and with all her faults, I love her still. (Applause.)

Gentlemen, from this time forth, I shall endeavor so to shape my future conduct, that each and every one of you, when far away, will be proud to acknowledge me among your correspondents, and own up to your friends, that Albany Packham was once your Demonstrator of MANUAL COMBUSTION, IN THE OHIO DENTAL COLLEGE. Again, gentlemen, I thank you from the center of my brain, for your kind attention and stunning applause.

CONTINUOUS GUM WORK.

BY DR. W. B. ROBERTS.

To the Editors of the Register.—*Gentlemen:*—By your last number I perceive that you hold me to the promise I rashly made at the Fourth Annual American Dental Convention, of furnishing an account of the method of making continuous gum work. The task I find is a more formidable one than I anticipated, and I regret it has not fallen to one more familiar with the use of the pen, and more competent than myself to do justice to a subject of so much importance. Why it has not before this been fully treated by those who have written so ably upon other branches of mechanical dentistry, it is difficult to say, unless it be that a knowledge of the art is still limited to a few, or that *its being patented* stands in the way of a favorable notice. However that may be, the admitted beauty and durability of the work, and its being generally adopted by the best practitioners, render a knowledge of the method of making it, desirable. I shall attempt but a plain practical account of it, such as one may be supposed to offer to an actual pupil entering upon its study, after having made himself conversant with the usual practice in preparing and fitting gold or other metallic plates.

We will suppose the work before us is the preparation of two upper sets. In following out the different processes, a few remarks may be introduced, suggesting methods of avoiding difficulties most likely to be met with.

Impressions.—When the plaster, mixed in the usual way, is nearly ready to set, you should fill the cup, raising the center a little higer than the edges. Introduce it gently into the mouth of the patient, after placing a napkin under the chin, and then carefully work and press the cup up to the roof of the mouth. The head of the patient should be inclined forward, so that the saliva may flow out upon the napkin. By neglect of these precautions I have known patients in the hands of inexperienced operators to suffer severely from choking. The cup should be held firmly in its place, not allowing it to be disturbed in the slightest degree, until it is ready to be taken out. The process is to be repeated for the two above-mentioned cases. Gutta percha in partial cases may be used to great advantage for taking impressions.

Plates.—Leaving each one to his own method of making plaster casts, the next process is the preparation of the dies and plates, and this presents some peculiarities which distinguish it from the routine pursued in making gold plates. In every piece of platinum work the edge of the plate should be turned over, in order to give a smooth finish to the edge, and under which the gum and body flows, adding much strength to the entire piece. The body and gum, when laid over the surface of the plate, should not quite reach the posterior edge, but about a quarter of an inch of the metal should be left exposed; the rest of the plate is to be covered with the gum work, which should slope off smoothly to the platinum, so as not to present any roughness to the tongue, and the surface of it is to be polished, to imitate the appearance of the natural rugæ of the palatial arch. The sloping edge may be obtained by soldering a three-sided wire across the plate, near to its edge; or by a method which I find preferable for its greater neatness, and the increased stiffness it gives to the plate. This is in building upon the plaster model (taken from the impression) a little triangular ridge in the same position the wire would occupy, extending in crescent form from the back edge of one wisdom-tooth to that of the other—the curve being forward. The ridge should slope very gradnally toward the back edge of the model, and the rise, when transferred to the plate, will hardly be perceptible to the tongue. The front side of the ridge serves as a shoulder for building the gum work against. I have sometimes carried the gum out to the edge of the plate; but this requires a very accurate fit. This result may also be obtained nicely by doubling the posterior edge about one-fourth of an inch in width, and finishing against the edge of the piece put across. We will suppose the first two methods (the wire and the triangular ridge) to have been adopted for obtaining the ridge upon the plates, one for each of the two upper sets. The mouth, when the impression is taken, should be carefully examined, to note the position of the muscles, and to determine the proper depth of the plate. You are then to take a little beeswax or plaster, and build a rim around the edges of the plaster models as high as you wish the plates to come, thus forming a shoulder, which, when the two parts of the die are closed over the plate, will form an angle of about (50) fifty degrees, which may be bent down, as will be hereafter described. The dies may be prepared of zinc or other metal, or any alloy you are accustomed to employ for this purpose—some precautions are to be taken in striking the plates, which are not required in swaging those of gold or other materials that are not to be afterward exposed to high temperature. Being cut by the pattern leaving it to project about one-eighth or one-sixteenth of an inch upon the shoulder, for a rim, the plate is to be laid upon the metallic die and gradually worked down with a wooden or horn hammer to a tolerably close fit, before attempting to swage it. It may be split in front if necessary, and also at the heels, and afterward restored by soldering the same, as is practiced with gold plates; but this is better omitted in cases that can be swaged whole. Great care is required to avoid bursting or tearing the platinum in the swaging. Annealing should be often repeated; and previous to each annealing, the plate should be cleaned with nitric acid in order to remove all particles of zinc and foreign substances that may be taken up and adhere to the platinum. These, if allowed to remain, would be incorporated with the platinum by the action of the heat in annealing and baking, which would seriously injure it. The swaging should be continued with hard blows, with a heavy hammer or drop, forcing the platinum into every depression in the dies; and the greatest care should be taken in completing the work, that the surface is smoothly finished, showing no dents or scratches. We will suppose the two plates we have commenced to come out in different conditions—the one we intend to put the wire across to finish the gum work, is disfigured upon the surface with dents and imperfections, resulting from incautious swaging, and with a hole in it, caused by being annealed without thorough cleansing from the particles of zinc or other metals it came in contact with, which made it extremely brittle. Zinc or lead is particularly destructive to platinum when the metals are heated together. The other plate, we suppose, is in good order, with the exception of the splits purposely made before swaging, and which are now to be closed up by soldering with pure gold. The hole in the other is also to be mended by introducing over it, on the palatial side of the plate, a piece of platinum, and soldering this with gold. Soldering at the same time across at the point heretofore described.

Articulation.—You will now proceed to fit the plate in the mouth of the patient, noticing particularly whether it rocks or loses its adherence when pressed upon one side or in front. If satisfactory, next place upon the plate a ridge of wax, which will serve to show the length and position the teeth are to occupy, and serve as a temporary fastening while arranging them. The best swaged of the two plates we will suppose now makes the best fit, and being provided with wax, is placed in the mouth of the patient, who is directed to shut the mouth in the natural way, and cause an impression of the under teeth to be made in the wax above. A vertical line is then to be drawn in the wax in front, marking the division between the two central incisors. We have now a perfect impression of this one; but no provision for determining the proper length to give the teeth. For this the upper lip should be allowed to assume a natural, easy position, and so much of the wax should then be cut off, as to leave about one sixteenth of an inch in the place of the central incisors visible below the edge of the lip; towards the bicuspids the length should slightly diminish. The other plate, when furnished with the wax, we suppose is placed in the mouth of a person who has, for years, enjoyed the use of only the front teeth—when such an one is directed to close the mouth, it will be found almost impossible to make two successive impressions of the lower jaw in the wax coincide; the patient does not bite twice in the same place. Close observation and the greatest care, will, therefore, be required in determining the proper place for the teeth, in order to obtain a natural expression. The face, moreover, in this instance, is sunken, and requires filling out to restore its original contour. For this purpose wax must be added whenever it is needed to form prominences, and depressions must be moulded in it where these are natural, as for instance, directly in front, where a fulness would give the appearance of a swollen lip. For the prominences or cheek restorers, designed to fill out the sides of the face, the projection of wax must not extend further towards the front of the mouth than the line between the second bicuspid and the second molar, if brought beyond this point, they distort the features, and show; when the mouth is opened, the shape and dimensions of the prominences should be obtained by repeated trials, observing carefully the effect of every alteration, as the patient is purposely kept in good humor, and without exciting suspicion of the object, induced to laugh and give to the features their changes of expression. The dentist should watch his patient as closely as an artist his sitter, in painting a portrait from life. And, here let me say, that this, that I call *artistic dentistry*, has been, and still is, grossly neglected; for, how often do we see persons in whose faces we discover a delapida-condition of the entire outline of the features. This can all be attributed to want of knowledge, or neglect on the part of their dentist. After having ascertained the necessary length and projection to be given to the cheeks and teeth, place the wax and plate in cold water, to render it as hard as possible (as we will suppose this to be a set to match an artificial under set) we will then place wax upon the under plate, the length as near as possible that we wish the under teeth, soften it, and placing both plates and wax in the mouth, let the patient gently close the month until the upper wax presses into the under sufficiently to allow the lips to close or touch in a natural and easy manner. This will show the length required for the under teeth. Let the patient open and shut the mouth, merely touching the wax together—let it be repeated several times, opening the mouth as wide as possible, and bringing the jaws suddenly together, so that there may be no mistake. When right, let the gums be pressed together so as to hold the whole mass firmly without disturbing the wax; then, with three pins or pivots of wood, fasten them together, running one near each corner of the mouth, through the edge of the under wax in the upper, the other pin into the edge of the upper, running down into the under wax at a point midway between the other two pins. Then remove the whole mass at once, place it on the articulating frame and run in the plaster. After it hardens remove the upper plate, place it upon a piece of paper, and draw a pencil mark around it, representing the projection the wax is intended to give the teeth and cheeks. Turn it over and draw another line. With these two lines or drawings as a guide, the teeth, body and gums may be placed as accurately upon the plate, as the wax had been, (which it will be necessary to remove by the process of imbedding, lining and soldering,) without fitting or trying it in the patient's mouth, during the process of making the set. Yet, it is always desirable to introduce them into the mouth once or twice, for instance, after the teeth are soldered fast—and again when the first coating of body has been applied. This prevents all possibility of mistake.

Arranging Teeth.—The next operation is embedding the artificial teeth in the ridge of wax prepared to receive them. This point requires especial care, and also some artistic taste; for, a slight variation in the position of a tooth may give a decided and unfortunate change of expression to the whole set. You will begin by cutting a bed for a central incisor, on one side of the central line marked in the wax, as deep as the thickness of the tooth, and laying this in its place, where it will be held by the wax. One tooth after another is to be thus placed, till the set is complete. Now, I will take the piece in my hand, place my thumb across the teeth to represent the lip, and observe the effect. The central line is right, the lateral incisors are even; but they stand too formal and stiff. I move them up a little to make them shorter than the centrals and incline them slightly, so that one corner of each nearly touches the adjoining central incisor: this gives a more natural expression. I move the canine teeth also, to make them a little more prominent. Attention must now be given to avoid in the general arrangement a defect very common in sets of artificial teeth, viz: too great exposure of the back teeth, giving the appearance when the mouth is opened, of its being filled with teeth? This comes of the curve of the piece being carried too far back, when it should be limited merely to the space occupied by the six front teeth. The bicuspids and molars must therefore be pushed in, the first bicuspid being nearly hidden behind the canine, and those beyond extending back in a straight line diverging slightly as they approach the end of the jaw. The teeth may now be covered with a thin coating of shellac, which will often prevent their becoming rough, when exposed to the heat of the furnace in soldering. They are next covered over with a coating of clean plaster, which holds them firmly while the linings are put upon them, and then imbedded in a mixture of equal parts of plaster of Paris and asbestos. When this hardens, the wax may be removed from the backs of the teeth, leaving them bare for receiving the permanent lining and attachments to the plate.

Lining and Fastening.—One set may have been furnished with the teeth known as "Robert's teeth," which are made with but one long pin. Under these you will fit a slip of tin or sheet lead, passing from one canine to the last molar on the other side, and a corresponding piece crossing this from the other canine to the other molar. These are patterns from which to cut the slips of platinum. The latter when shaped are to be punched full of holes (through which the body runs, giving increased stiffness to the whole), and placed under the pins, standing edgewise upon the alveolar ridge. Other strips may be introduced wherever you think the work requires stiffening and strengthening: the whole lining may thus be doubled or tripled. A wire also may be run across from one bicuspid to the other, which will counteract any tendency in the work to spread. The pins may now be bent down over the slips holding them in their places, until the fastenings are completed by soldering them together. The linings may thus be put in, in from ten to twenty minutes.

The set provided with the other style of teeth, having two pins, is to be managed in another way. Place the piece on the table, the back edge directed toward you, and the teeth uppermost. Cut platinum into slips one for each tooth, of width equal to that of the tooth and half the spaces beside between it and the one next to it. These, when arranged in their places, will then form a continuous lining behind all the teeth. Bend up about one-eighth of an inch of one end of each strip at an angle of forty-five degrees, and divide this portion by slitting it with four or five cuts. Touch the points of the pins with a camels hair brush dipped in rogue or other easily transferred coloring matter, and apply the slips of platinum, one after the other, to their respective teeth, with the split end resting on the plate, that they may receive the mark for the holes for the pins. Then punch the holes. The upper ends may now be trimmed off nearly down to the holes; and the projecting sides be slit evenly with the edges of the tooth from the top about halfway down, leaving the narrow slips attached. With a small pair of tweezers place the lining on each tooth, letting the pins come through the holes punched for them, and then pinch each pair of pins together with pliers, thus fastening the linings firmly to the teeth. The slips of platinum at the edges are then to be interlocked with the slips belonging to the adjoining teeth till all are bound together in a contniuous lining. The bottoms or split ends resting on the plate should then be pressed down so as to come in close contact with the plate, this being necessary to insure adhesion by soldering. With a sharp pointed instrument make a scratch along the plate about one-sixteenth of an inch from the foot of the linings, which will prevent the solder flowing out upon the plate. Place a small bit of pure gold upon the pins, another bit at the interlocking of each pair of slips, and one or two at the base of the lining of each tooth, adding with each bit as much borax as will adhere to the little piece of solder, and no more. The piece is now ready for the next process of—

Soldering.—You may now gradually heat up the work in the muffle of the furnace, and when it is of a deep red, remove it on a piece of charcoal or other suitable support and solder the parts with a hydraulic blowpipe. But if this or no other one equally powerful be at hand, the piece must be left in the furnace, and a careful watch kept to remove it as soon as the solder all flows; for, exposure to high heat is apt to etch or roughen the surface of the teeth, by the adhesion of plaster and asbestos to the enamel.

After taking the work from the furnace and cooling, the next operation is to remove the plaster; and the portion of this forming the base, on the part that corresponds to the jaw, should be reserved to be used as a support for the piece in the subsequent bakings, which prevents, in a degree, change of shape or springing of the plate. Should the piece soldered in the furnace be found on removing the plaster and asbestos, etched or rough, we will restore it as described under the head of enameling or gumming. The pieces are to be worked, then placed in diluted nitric acid for the purpose of removing the adhering borax and other foreign substances, and then washed again. They are next laid upon the metallic casts to be there held while the plate is scratched or etched with a sharp point over all the surface intended to be covered with the body and gum.

First Coating of Body.—The material we prefer over all others is Allen's preparation, called "body," as prepared by E. A L. Roberts. This being made into a thick paste, with a little water, is taken up with suitably shaped knives or spatulas, and introduced between and around the teeth, and over the palatial arch as far back as the projecting bead or the wire left near the back edge of the plate. The paste should be carefully worked and pressed into the interstices it is designed to fill, packing it solidly, and building up or keeping back according as prominences or depressions are to be produced. Then with your little knives carve out between the teeth, leaving a furrow which will produce a prominence over the fangs, resembling the roots of the teeth as they appear in the natural gums. The crowns of the teeth should be kept carefully free from the coating, as also the spaces between the teeth, lest these should be afterward baked together. Sufficient width must also be cut under along the projecting edge of the plate to admit of its being turned over, as hereafter described.

Baking.—When the plate and teeth are thoroughly cleaned with a brush, and all loose particles of paste removed, it is laid upon the base reserved for the purpose, and this upon a baked fire-clay tile or slide, and is introduced into the outer part of the upper muffle of the furnace, as it becomes hot it is gradually pushed farther in. When quite red hot, it is transferred to the lower muffle, and there brought to a full white heat, at which it may remain from five to twenty minutes, or until it is seen, on drawing it to the outer end of the muffle, to have a glossy appearance. It is then removed and placed in another muffle not connected with the furnace, which should be closed up while the plate gradually cools. The process is somewhat varied in the case of the set with single pins to the teeth, as these require some additional support to counteract any tendency to turn upon the pin, or otherwise move from their place. This additional protection is obtained by turning the plate with the teeth down and burying these for half the length of the crowns in a paste of pure pulverized silex placed to receive them. This will fill the spaces between the crowns of the teeth and may be removed without difficulty after baking. Or, placing the set upon the plaster base as before, we will brace the teeth requiring support by introducing small pieces of platinum in the spaces. This precaution it may be well to adopt in any case.

When the piece is quite cool, it must be placed upon the metallic die to detect any alteration that may have occurred in its fit, and to restore it to its former shape; which may be done by pressing it down with the hand or by tapping the molar teeth with a wooden or horn hammer, and pressing the plate at the same time firmly down to the die. It may sometimes be sprung back by applying the thumbs to the air chamber and the fingers to the cutting edges of the molar teeth and pressing; or a gentle tap with the wooden hammer upon the air chamber may answer the purpose; but the safest plan is to use the die. Should cracks be produced in the body, no harm is done, as these are made to disappear in the second baking. The edge may be turned over by means of the burnisher, using also a little hammer and pliers too, if necessary. After this is done, the plate should be fitted upon the die, to be sure that the fit has not been disturbed.

It is well also to test it in the mouth of the patient before proceeding further, as any alterations required can be conveniently made in this stage; but if the work has been well done so far, it is not essential to try the fit in the mouth.

Second Coating.—The paste for the second coating is made the same as that for the first. It is carefully laid upon all the parts that require to be built out, and is introduced into all the crevices into which it is made to settle, by lightly tapping the piece. With the little spatula the surface is nicely carved and shaped around the roots of the teeth, as in preparing for the first baking. A little ridge is raised with the camel's hair pencil from the line between the two central incisors, running back along the palatial surface to the middle of the posterior edge of the plate; and this ridge is next halved by a central line made along its whole length, by the brush or the edge of the spatula. On each side of the ridge, little prominences are to be raised to imitate the ruga of the mouth; the dentist must, after observing different mouths, exercise his taste and judgment in producing a natural effect. The second baking may then be conducted like the first, (with the exception of its being a little harder), and the subsequent cooling also; when the piece should be placed again upon the metallic die to prove its shape unaltered, in which case it is ready for the coloring.

Enameling, or Gumming.—The "gum," being mixed as was the body, should be evenly laid on, in proportions only to be learned by experience ; and in the selection of the shades of color you must be governed by your own taste, as some dentists prefer brighter and some paler tints for their work. I should recommend, however, the use of very thin coating at first ; for this can be added to, and a deeper shade given by a second heat if desirable. If the teeth have been etched in soldering, a little coating of etching enamel, of the consistency of cream, should be laid upon them with a camel's hair pencil. The plate being well cleaned is then ready for the furnace; but more care is now required not to expose it too suddenly to a high degree of heat. If pushed too fast into the muffle, pieces are likely to scale off, leaving defective spots, such that it would be necessary to remove the work, cool it down, and repair with more gum. When well heated in the upper muffle, the piece may be removed to the lower one, and exposed to a full white heat from ten to twenty minutes, or until the gum has thoroughly flowed and shines like melted glass.

It is now to be removed and cooled down as before, in a cold muffle. When at blood heat, take it out, and place it in water of about the same temperature, avoiding touching it with the fingers. This is an effectual method of preventing the checking or crazing of the gum, which frequently occurred in the old way of annealing, when the pioce was cooled and taken in the hands. I discovered it some time ago, and communicated it to several dentists in this city ; and I notice publicity has been given to it, without my receiving the credit to which I am entitled. Though it appears a simple thing, it is certainly an important improvement. At first, I placed the piece in my mouth on taking it from the muffle ; and afterward I substituted warm water. The next and last operation is polishing, in which there is nothing requiring peculiar directions,—I remove from the plate any little particles of gum or body, and rub it thoroughly with fine sand-paper, then with a fine stick and pumice stone or fine emery, and lastly with a steel burnisher or bloodstone, with a little soap suds.

Continuous Gum applied to Partial Sets.—Partial cases may be made of continuous gum; but the work is so various in its nature, that the dentist must necessarily depend much upon his own judgment. Difficult cases will constantly present themselves, that will require the exercise of much study and ingenuity, in which the general instruction that can be given in words, may be of but little service. The first attempt of this kind in my own experience, was in replacing two central incisors.—

Taking two continuous gum teeth, I placed upon them a platinum lining, slitting this down along the edge of one tooth nearly through the piece and up the edge of the other tooth by a parallel cut, leaving the two parts joined together by a narrow slip. This allowed sufficient motion between the teeth, so that they could be adjusted as desired. I then placed a bit of tissue paper on the plaster model, covering the spot to be occupied by the teeth and gum, to prevent the adhesion of the body to the plaster, and holding the two incisors in their places, I worked the body into all the depressions of the gum and around the roots of the teeth. I then removed the whole from the model, and placed the piece in a paste of pulverized silex, or plaster and asbestos, upon a slide, and baked as described for full sets. The little slip of platinum kept the two teeth in place. The work shrunk somewhat; but this was remedied by again placing the piece upon the model, with the intervention of tissue paper covered with a thin coating of body. Into this I pressed the piece, till it occupied its true place, and then filled in again with more body all the crevices around the roots of the teeth, and rebaked.

After enameling, if the work has been carefully and skillfully done upon this plan, it will be as fine a piece in appearance and fit, as can be made. It may then be soldered to a gold plate, and the little strip of platinum between the teeth be cut out. With the body and gum formerly in use, many difficulties were often encountered from discoloration of the gum, or from other injuries incurred in soldering. But with Roberts' material, these are easily avoided, and the piece can be treated the same as a block or single gum teeth. In partial sets on entire plates of platinum, I have sometimes found trouble, from the enamel giving way upon the small narrow points that connected the teeth with the plate, by the shock occasioned in biting. I have consequently left these points uncovered, and used two or three thicknesses of platinum to give greater strength. But where this is likely to occur, gold plates would be preferable, if nicely adapted with single gum teeth, or blocks of continuous gum, as the case might require. I have also applied continuous gum in cases where the natural teeth, from one to five in number, were left in the mouth, by making the plates as in full sets, cutting out around the natural ones, and raising a small bead, or placing a light wire around about one-eighth of an inch or more from the teeth, against which the gum or body is to be finished. The points around the teeth are to be left free, in order to be burnished down in case of imperfections caused by the difficulty of obtaining exact impressions in these places. In such cases, I have sometimes formed a strong standard of several thicknesses of platinum fitting closely against one or more natural teeth, leaving a loop-hole, through which to run a gold clasp for afterward securing the artificial set.

I have also secured the gold to the standard by rivets of platinum and sometimes by two or three gold screws, not providing, in these cases, the loop-hole. These methods are to be preferred to using solder for fastening; for, in case of repair, the clasps are easily removed without leaving any foreign substances: but in case of soldering, however carefully they may be removed, there will remain some alloy, which, in the baking heat to which the piece is to be exposed, will be incorporated with the platinum. Even so small an amount of silver as may be in gold coin used for solder, will communicate a yellowish tinge to the gum, spoiling the whole work. Many operators in their early practice, I doubt not, experienced this result; and learned that no alloys, especially of silver or copper, can be admissible for soldering this work. I have tried platinum clasps without success, as no elasticity could be obtained, and therefore would not hold upon the teeth. Another source of mischief may properly be noticed in this place. In baking, especially with a new furnace, or with muffles lately renewed, either at the first or second heat, or it may be in enameling, the piece is sometimes changed in its texture and color, as is supposed by the gases present, and the phenomenon is called gassing the piece. The body becomes porous like honey-comb, and of a bluish color. When this occurs, there is no remedy but to place it upon the metallic die, removo the whole of the injured part, and replace it with a new coating of body and gum. The teeth are seldom, if ever, thus effected. As a precaution, the muffles should be well ventilated with holes for the passage of the heated air and gases.

Though continuous gum work may at first appear tedious and beyond the reach of inexperienced dentists, they will soon find that by patience and perseverance, it may be done rapidly, and with much more satisfaction than gold work. Their patients will be better pleased with it, and the practitioners, who are influenced by professional pride, and are unwilling to place any but the best work in the mouths of their patients (except where circumstances justify the use of inferior articles), will find that they can not dispense with it.

Repairing.—Dentists, entirely unacquainted with the method of preparing continuous gum work, have been known to speak unfavorably of it to their patients, because of its weight, its liability to be broken, and the impossibility, in this case, of its being repaired. No substitutes for natural teeth are past finding fault with. We claim no perfection for this style; but we do insist, its defects are of less account than those of other kinds of work. It is true, the pieces are more liable to be broken by a sudden blow or fall; and for this reason, those who wear them should be especially cautioned to protect them from injury. Yet it has been proven by comparison with gold work, that the continuous gum presents fewer cases of injury, than the gold; and that these cases are by fractures resulting from carelessness in dropping the pieces. But, even if badly shattered, and several teeth should be knocked out, the piece may be soon restored, with no mark or scar indicating fracture or repair. In case of a single tooth being broken, a new one is readily inserted by entirely removing the crown of the injured one, and grinding out a niche in the gum at its base, nearly one-fourth of an inch deep, to receive the new tooth; then fill up the niche with body, and press the tooth you wish to insert down to its proper position; trim the surplus body about the neck of the tooth as in full sets, absorb the moisture with a napkin, and apply the gum to the body and wherever required. Stay the tooth with a little plaster and asbestos placed upon its point and reaching over, so as to include the adjoining tooth on each side. A better method, however, is to place the teeth downward, imbedding their points in a paste of pulverized silex laid upon a slide, and then subject the piece to the heat required for enameling. Once baking will generally suffice to complete this operation. But, if a piece has been more seriously injured,—say by loss of a central and canine tooth, with a point broken out from the edge of the gum, and the plate is bent so as to have lost its fit, and the gum shrunken away at any point,—we adopt a thorough method of repair. We first take an impression of the mouth and make a plaster model; upon this we place the plate, and over the point where the gum is shrunken we chip off the body and gum, and with a burnisher work the plate down wherever required, to exactly fit the model. We then make a niche for each tooth to be inserted, apply the body and gum, stay the teeth, and bake the piece as above described. If it has been thorougly packed, two bakings will be sufficient, but sometimes three may be required. The only rule is, to repeat the operation till the object is accomplished, taking care always not to overheat the piece. In case of the piece having been long worn, it is well, before doing any thing to it, to subject it to a moderate degree of heat, sufficient to burn off any impurities it may have collected in the mouth.

Another set may be presented for repair, literally broken to pieces; but the plate remaining a perfect fit, and some of the teeth being undisturbed, we wish to avail ourselves of these. We therefore make a dam of putty around the edge of the plate, and run in fusible metal to form a cast, which shall serve as a support for the plate. Not to endanger cracking the teeth by the heat, the piece may be placed in a dish containing a little water, and after the metal is poured and begins to harden, more water may be added, so as to cover the whole mass. But this s hardly necessary, if the alloy be run nearly at its cooling temperature.

The piece being now supported upon the cast, and held firmly with one hand, a small chisel, made from an excavator, may be applied with the other to the old material which it is desirable to remove, and an assistant gently tapping this with a hammer, the body is quickly chipped off between the teeth, and wherever the chisel is directed without injury to other parts, or without mis-shaping the plate. The teeth may now be inserted and soldered to the plate, with the old or new linings if required, and the new body and gum may then be applied, as in making a new piece. All this may seem to involve much time and trouble ; but little more is really required than to repair a gold plate. The cast of fusible metal is much more readily made than a plaster cast. The old body and gum is removed and new applied, in shorter time than two gum teeth can be fitted upon the gold plate, and the soldering and first baking of the body requires no more time than to solder and cool the gold work. We then have, in the one case, the gum to be applied, and in the other, the gold is to be polished ; so that the whole difference of time involved, however great the repairs, need not be more than one or two hours. But a single tooth may be repaired as soon as a gum tooth on gold plate. One difficulty, often met with in mending, requires to be noticed. It arises from the necessity of employing mixtures likely to be of different composition from that of the original body; and possibly more infusible. In this case, the old body will melt, before the new has become incorporated with it, thus ruining the work by overheating. In some instances, after one baking, I have been obliged to condemn the whole work and entirely replace the old body. This difficulty is now obviated by being able to use always the same material ; it being prepared in large quantities, by Dr. E. A. L. Roberts (to the amount of a ton weight at a time), so that the supply of uniform composition can be depended upon for years to come.

Concluding Remarks.—In looking over this paper, which has already reached a length I did not anticipate, it is easy to perceive that numerous points have escaped notice, which, to the experienced manipulator, are of trivial importance; but to the student, without more detailed instruction, may be insurmountable obstacles to his farther progress. If, however, the latter possess a fair endowment of skill and ingenuity, he need not despair of success.

The plain outline of the various operations, as given above, may be his general guide which will lead him to good results; but his own judgment, skill and taste, moreover, must be repeatedly exercised, independently of my instructions, however minutely they may be given. Like all other processes, this can not claim to have reached perfection, and, therefore, there is still room for improvement. It admits of infinite variety in its application, and hence presents a fine field for artistic taste and invention; which, I can not doubt, will be well improved by the genius and energy exhibited by the Dental profession in all such directions. There is a fascination about this style of work, which no other possesses, as it seems to compete, in point of beauty, with nature itself.

A NEW METALIC ALLOY.

M. Gersheim has just discovered a new amalgam possessing the singular property of being almost as soft as wax when warm and of hardening in the course of a few hours when cool. It may be modeled into various shapes by the sole action of the fingers; it adheres strongly to other metalic substances, as also to glass and porcelain; so that it may serve to mend broken crockery, and is equal in that respect to the best mastic. When hard, it takes a fine polish like that of silver or brass.

The Selma, (Ala.) *Sentinel* says, that a dentist of that city recently prepared a full set of artificial teeth for a lady of the vicinity, some sixty or seventy years old, and who had been quite deaf for twenty years past. As soon as the teeth were placed in her mouth, the hearing of the old lady became quite suddenly as good as it ever had been.

A APPEEL FOR ARE TO THE SEXTANT OF THE OLD BRICK MEETINOUSE.

BY A GASPER.

O sextant of the meetinouse, which sweeps
And dusts, or is supposed to ! and makes fiers,
And lites the gass, and sumtimes leaves a screw loose,]
in which case it smells orful—worse than lamp-ile ;
And wrings the Bel and toles it when men dyes
to the grief of survivin pardners, and sweepes pathes;
And for the servases gits $100 per annum,
Wich them that thinks deer, let em try it ;
Getin up befoar starlite in all wethers and
Kindlin fiers when the wether is as cold
As zero, and like as not grean wood for kindlers ;
i would'nt be hired to do it for no some—
But o sextant ! there are 1 kermoddity
Wich's more than gold, wich doant cost nothin,
Worth more than anything exsep the Sole of Mann !
i mean pewer Are, sextant, i mean pewer Are !
O it is plenty out o dores, so plenty it doant no
What on airth to do with itself, but flys about
Scatterin leavs and blowin off men's hatts ;
in short, its jest 'free as are' out dores.
But o sextant, in our church its scarce as piety,
scarce as bank bills when agints beg for misshuns,
Wich some say is purty often (taint nothin to me,
Wat I give aint nothin to nobody) but o sextant,
u shet 500 men, wimmen and children,
Speshally the latter, up in a tite place,
Some has bad breths, some aint 2 swete,
Some is fevery, some is scrofilus, some has bad teath,
And some haint none, and some aint over clean ;
But every 1 on em brethes in & out and out and in,
Say 50 times a minit, or 1 million and a half breths an our.
Now how long will a church ful of are last at that rate,
I ask you, say 15 minits, and then what's to be did ?
Why then they must breathe it all over agin,
And then agin, and so on, till each has took it down
At least 10 times, and let it up agin, and wants more.
The same individible doant have the privelidge
of brethen his own air, and no ones else :
Each one must take watever comes to him.
O Sextant, doant you know our lungs is bellusses ;
To blo the fier of life, and keep it from
goin out ; and how can bellusses blo without wind ?
And aint wind *are?* i put it to your conschens.
Are is the same to us as milk to babies,

Or water is to fish, or pendlums to clox—
Or roots and airbs unto an injin Doctor,
Or little pills unto an omepath,
Or boys to gurls. Are is for us to brethe.
Wat signifies who preeches if i cant brethe ?
Wats Pol ? Wats Pollus ? to sinners who are ded ?
Ded for want of breth ; why sextant, when we dye
Its only cause we can't brethe no more—that's all.
And now, o sextant, let me beg of you
2 let a little are into our church.
(Pewer are is sertin proper for the pews)
And do it weak days and Sundays tew—
It aint much trouble—only make a hole
And the are will come in of itself ;
(It luvs to cum in whare it ean get warm ;)
And o how it will rouse the people up,
And sperrit up the preacher, and stop garps,
And yawns, and figgits, as effectooal
As wind on the dry Boans the Proffit tells of.

ANOTHER CHLOROFORM CASE.

Another dentist, a Dr. Webster of Montreal, has been convicted of an attempt to commit a rape upon a patient while under the influence of chloroform. It is insisted by those who understand the effects of chloroform, that in most cases, outrages like these are vagaries of the brain, and exist only in the imagination. If so, why will dentists continue to run the risk of administering chloroform to patients who are unattended ? If not, why will females, claiming to be respectable, subject themselves to the risks which numerous convictions seem to show result from their taking chloroform when not in the presence of third parties.

AMERICAN DENTISTS IN EUROPE.

The Paris correspondent of the New York *Times*, says:—"I will not pretend to explain why dentistry in Europe is so far behind that in the United States. It is most singular that, in France, where surgery and the accessories of the toilet have been brought to the highest perfection, the art of the dentist should have been left so completely in the rear. Until very lately, the art was ranked among the lowest of the trades ; a dentist was, in fact, but a puller of teeth, and one of the commonest expressions in French is, even to this day, '*Il ment* *comme un arracheur de dents!*' (He lies like a dentist, or a tooth puller.) It was not until American dentists settled in France that the art was at all respected, or, indeed, deserved to be respected.

"Mr. Brewster was the pioneer of American dentists in Europe. He settled in Paris in 1836, and soon became the dentist of Louis Philippe, the Czar Nicholas, and other monarchs. He was bought out by Mr. Thomas W. Evans, of Lancaster, Penn., in 1850, who, with his brother Theodore now continues the business. These gentlemen not only maintain the position ceded to them by Dr. Brewster, but they have extended it. They are the dentists to the courts of France, Russia, Bavaria, Wurtemburg, and, I believe, of Belgium and Saxony. With such high protection it may be readily conceived that the practice of the gentlemen is immense. Besides the Legion of Honor granted to the elder brother by the Emperor of France, both the brothers have received decorations, and rich gifts from the other monarchs by whom they are employed.

"Mr. James Fowler, formerly a partner of the deceased Harvey Burdell, afterwards established in Bleecker Street, New York, came to this city four years ago, and went into business as a dentist on the Boulevard des Italiens, in partnership with a French merchant by the name of Preterre, the latter furnishing the funds for the establishment of the house. At the end of three years, however, Mr. Fowler sought and obtained before the tribunals a dissolution of the partnership, and at once established a new house in the Place de la Madeleine. Since his residence in Paris this gentleman has made several pieces in gold for the replacement of lost parts, which excited the astonishment and the admiration of the Academy of Medicine and of the entire faculty of Paris. Among these were an entire lower jaw in gold with the teeth affixed, several upper jaws, obturators, etc. Although not new in America, it was the first time any successful attempt of the kind had been made in Europe; and Mr. Fowler is now in the enjoyment of a first rate reputation and practice. Mr. Preterre obtained a workman from the United States, of the name of Fowler, and is continuing the business at the old place, under the name of Fowler & Preterre.

"Mr. Horner, of Philadelphia, is a partner in the long-established English house in the Rue de Luxembourg, which now bears the name of Stevens, Watson & Horner. This is the largest and richest dental establishment in the world, its income reaching $60,000 a year. Gold work, however, has only been introduced into this house since the entrance of Dr. Horner.

Previously their artificial pieces were made of hippopotamus entire, and decayed teeth were filled with amalgams—the ancient French and English system.

"Dr. Gage, formerly of Mobile, has also established himself in Paris, as a dentist, and like the others, is doing a good business. Mr. Potter, an American dentist, who has practiced in Bombay and Lisbon, has been for some years established in this city, and lately took into partnership a dentist of New York, Mr. Crane.

"Dr. Parmly, formerly of New Orleans, an elder brother of Dr. Eleazer Parmly, of New York, has been practicing dentistry for three years past upon children in the schools of Paris and London, till an attack of typhoid fever, followed by partial paralysis, disabled him from the active pursuit of his profession. He continues to reside in Paris, however, and gives advice to families and schools in regard to the care of the mouth in young people.

"A gentleman who announces himself to the public as an American dentist, Dr. Koth, 'formerly of the United States, late dentist to her Majesty the Queen of Spain,' has established himself in Paris within a month. Dr. Koth, according to his circular, speaks English, German, Spanish and Swedish.

"As I was passing rapidly in a carriage, a few days ago, through an obscure quarter of the Faubourg St. Germain, I had a hasty glance at a sign which had evidently just come from the painter's hands, and which bore the words *Dentiste Americaine*, preceded by a name of the purest Gallic origin. So you see how the current is running.

"So wide-spread is the reputation of American dentistry, that the teeth of nearly every monarch in Europe are filled, pulled and replaced by Americans, or soi-disant Americans. Thus, as I have already mentioned, the Evans, of Paris, are the dentists to courts of France, Russia, Bavaria, Wurtemburg, and some other smaller States. At Rome, Dr. Burgess, an American, is the principal dentist; at Madrid it is Dr. McKeehan, another American. The principal dentist of Berlin is Dr. Abbott, of Bangor, Maine, while the court dentist is a German, who studied in America, and who calls himself in consequence an American dentist. At Vienna, where it is almost impossible for a foreigner to get permission to do business, Dr. North, also from the State of Maine, has rapidly gained the first position among the aristocracy, although he has not yet arrived at the court. When he first went to Vienna, Mr. North was obliged by the police restrictions from giving any publicity, either by advertisements or a sign at the door. While stowed away privately in the upper part of a house, wondering whether his enterprise was going to fail or succeed, he was one day surprised at receiving the visit of Prince Lichtenstein, who came to get work done. The American complained of the rigor of the police, and the Prince said to him, 'never mind the police; take a house to suit you, put your sign out, and if they trouble you come to me.' Mr. North did as the Prince advised, the Prince sent his daughters and others of his relatives and acquaintances, and from that day the fortune of Dr. North was a fixed fact. He numbers now in his protectors not only the Lichtensteins, but the Metternichs and Schwartzenbergs.

"In St. Petersburg, the aristocracy employ two Irishmen, brothers, who studied their profession with Dr. Brewster, at Paris, and who call themselves American dentists. The principal dentist at Hamburg is Dr. Cohen, who studied in America, and calls himself an American dentist. The brothers Tellander, who studied dentistry in New York, do the court and the principal business in Stockholm and Christiana, the capitals of Sweden and Norway. There are a few other dentists scattered through the German Confederation, Germans by birth, who received their professional education in the United States, and who call themselves American dentists.

"At London, Mr. Rann, an American dentist, has rapidly reached a large practice, in exclusively aristocratic families. Another American, whose name I forget, has also arrived at a large practice in London. At Manchester there has been an American dentist for a good many years. This closes the chapter on dentistry.

"Two American Physicians are in practice in Paris, Dr. Bigelow, of Boston, and Dr. Beylard, of Philadelphia, both graduates of the school of Paris. The latter gentleman, however, is of French origin; he was two years house physician in the wards of Dr. Trousseau, at the Hotel-Dieu. Both these gentlemen are doing well.

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MICHIGAN STATE DENTAL ASSOCIATION.

Fourth Annual Meeting, held in the city of Detroit, January, 11th and 12th, 1859.

Agreeable to published notice, the Society met at the office of Drs. Whiting & Benedict, at 7 o'clock, P. M.

Both President and Vice-President being absent--

Dr. R. S. Bancroft, of Romeo, was appointed chairman, and John A. Harris, of Pontiac, secretary, pro tem.

The minutes of proceedings of last meeting were read and approved.

Letters were read from the President and Vice-President and several members, stating the cause of absence, and expressing regrets therefor, with sentiments of sympathy and encouragement.

The Society now proceeded to the election of officers for the ensuing year.

Dr. C. B. Porter, of Ann Arbor, was elected President.

Dr. R. S. Bancroft, of Romeo, Vice-President.

Dr. L. C. Whiting, of Detroit, Secretary and Treasurer.

No special order of business having been prepared, it was resolved by acclamation, to take up the same subjects for discussion, and in the same order, as at the previous meeting.

The election to membership was now proceeded with. Six new members were added to the list, and on motion of Dr. Harris, of Pontiac,

John T. Toland, from Cincinnati, was elected as an honorary member, by acclamation.

MEMBERS PRESENT.—Drs. H. Benedict, L. C. Whiting, W. Cohoon, C. F. Knowlton, Geo. L. Fields, T. A. White, J. H. Farmer, R. V. Ashley, D. C. Prevost, of Detroit; R. S. Bancroft, from Romeo; T. D. Ingersoll, Monroe; C. B. Porter, Ann Arbor; John A. Harris, Pontiac; A. F. Barr, Ypsilanti; S. C. Smith, Flint; C. S. Chittenden, Hamilton, C. W.; John T. Toland, Cincinnati, O. Besides which, quite a number of gentlemen, dentists and physicians were in attendance, the greater portion of the time, making an assembly of from twenty to twenty-five persons.

The discussions were now opened, each member being limited to ten minutes.

SUBJECT 1st.—PREPARING CAVITIES.

From the difficulty of illustrating, and the fact that nearly every case requires different treatment, calling into aid the judgment, tact and skill of the operator, there was a manifest reluctance to open the discussion on this subject.

Dr. Whiting, however, gave a very interesting explanation of his mode in a variety of cases, filing, wedging, etc., as the case requires, dependent on the situation of the teeth, age of the patient, etc.

Several others made some remarks, more in the form of conversation than discussion, all of which was deeply interesting and gratifying.

Adjourned to meet at same place to-morrow morning at nine o'clock.

WEDNESDAY MORNING, Jan. 12th, 9 o'clock.

Society met according to adjournment—minutes read and approved.

SUBJECT 2ND,—FILLING TEETH,

Was taken up and the discussion opened by

Dr. Benedict, who gave his experience and practice in different cavities, and different materials used, both foil and crystal gold, in some cases prefers foil, in others sponge. In reply to question, stated how he treats sensitive dentine, abscess, etc., to the satisfaction of all present.

Dr. White, in shallow cavities of the front teeth with wall broken, finds it frequently difficult to get a good start, especially when the decay extends near to the nerve, is very careful not to expose or puncture the nerve, uses creosote, arnica and origanum, to allay sensitiveness, then varnishes the cavity with gutta percha, which being a non-conductor protects the pulp from the sudden changes of temperature, chisels down the ragged edges to obtain smooth strong edges, thinks the most of failures occur from a neglect of this precaution, tries to get points dovetailed, if there are no points he makes them, sometimes cuts a groove around the inside margin. Uses both foil and sponge but lately crystal gold alone, having dryed the cavity, (the dryer the better) he proceeds to fill, pressing lightly at first, fastening the gold in retaining points, and building a bridge over the nerve, and thus continues adding layer after layer until the cavity is full. In this way he has always been successful.

Dr. Chittenden don't coincide with all the ideas advanced, not met with much success in wedging, but still uses it. Take the case of a central incisor, with a large approximate cavity, first cut an opening with a chisel, then with a half round or oval file, separates well, so as to give a strong wall and enable him to prepare the cavity well. Then, with serrated instruments and soft foil (generally Abbey's) in pellets, begins at the bottom of the cavity, and with hard pressure packs well up to the bottom and toward the gum. After a good foundation is laid, then takes crystal gold foil and fill up flush, pierce a hole in the center and pack in a wedge, the object being not so much to make it adhere, as to have the cavity perfectly full, it don't do to anneal foil in pellets, as it makes a solid mass, he prefers always to have a strong wall, and generally cuts away until it is strong enough to resist all the force he can apply. The Doctor exhibited his mode of forming pellets, which is the same as the cylinder, described by numerous writers. A slate and pencil were now procured, and the discussion run into a conversational and illustrative character, though highly instructive, is impossible to report.

The constitution was now read by the secretary and signed by new members, initiation fees paid, etc.

On motion the rules were suspended, and the remainder of the forenoon was occupied in relating cases of interest which have fallen under the notice of different members.

Dr. Chittenden related the case of a child, kicked by a horse on the chin, process fractured, some of the teeth lost, some buried in the process and afterwards resumed their proper place without any scientific aid.

Dr. Harris. A case of fracture of process involving three molars and dens sapientia teeth, occurred in the attempt by a physician to extract a second bicuspid, dissected around and removed the process with teeth attached.

Dr. Smith. A case of gradual displacement of an incisor tooth, caused by the force of the lower teeth striking against it, until it protruded to the annoyance of the patient, and was extracted. Approved.

Dr White. Case of diseased antrum, great pain, inflammation, physician advised removal of the jaw. On examination by self and Dr. Cohoon, opinions concurring, removed the roots of two bicuspids, opened the antrum, from which a large quantity of offensive matter was discharged, treated with creosote and perfectly restored.

Dr. Whiting treated a scar in the cheek, called by a physician cancer. Removed an offensive tooth, healed the sore and removed the depression by adapting a piece of tin with Burgundy pitch, to draw it to the proper shape.

Dr. Smith. Similar case cured by pledgets of cotton between cheek and tooth, saturated in tinct. arnica, and renewed daily.

Dr. Field. A case—hole in gum size of wire excavator, considerable discharge and no pain. The fang of a bicuspid transverse to the opening. Asked advice, which was given, viz: to remove fang and treat with camphor and creosote.

Dr. Chittenden, called by physician in consultation, to remove necrosed bone, introduced a probe and out popped a fang, discharge ceased and man got well.

Dr. Harris. Case—teeth badly decayed, patient in picking them with a pin, the pin slipped out of his fingers and disappeared. Probed about two inches but failed to find it. No pain.

Dr. Field also exhibited a second molar and dens sapientia, the posterior fang of molar perfectly united to the anterior surface of the dens sepientia, so as to form an angle of thirty-five to forty degrees.*

In bleeding, after the extracting of teeth, Dr. Harris uses tannin and ether.

Dr. Field uses myrrh and camphor, on cotton held by a piece of cork and bandage.

Dr. Farmer, perchloride of iron, and related an interesting illustration of its effects, for which we have not room.

Dr. Chittenden thinks, in protracted bleeding, the gums are also implicated, has used tinc. perchloride of iron with never-failing success.

Dr. White has but one panacea, strong vinegar with alum, and compress.

On motion, adjourned to two o'clock.

Afternoon Session, Wednesday, 2 o'clock.

Society met pursuant to adjournment. On motion, reading of minutes was dispensed with.

Several bills were presented, for expenses incurred since last meeting, all of which, on examination, were approved and ordered to be paid.

Subject 3rd.—Treatment of Exposed Nerves.

The discussion was opened by the reading of a paper from Dr. Mansfield, on this subject, which will be found in another part of the Reporter, under the head of Original Communications.

Dr. Whiting has treated nerves and filled fangs, as described by Dr. Mansfield, frequently finds deposits of Lime at the point of the root, and thinks it necessary that such deposits be removed in order to ensure a healthy condition, sometimes the nerve cavity is compressed, he considers it necessary to open the cavity, so as to get to the point of the fang, by some means, remove the deposit, and by careful treatment the fang will become healthy.

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*Dr. F. has promised to give us the history and description of this case in detail, with an engraving of the teeth in position, for the next number of Reporter. And we would suggest that each of the gentlemen under whose observation the foregoing cases occurred, will do likewise. These are cases of much interest, and it is from such that facts are deduced, and great scientific principles established.

Dr. Ingersoll does not claim anything new. In these cases it is necessary to labor both mentally and physically, the chief object is to get the fang perfectly clean and healthy, and to induce his patient to exercise patience. To do this, he places the patients on their own responsibility which causes them to be careful in observing instructions, in this way he is enabled to save a great many. Has treated ulcerated fangs, where he could pass a probe beyond the point of the root, with care and patience has succeeded.

Dr. Chittenden has been doing fang filling only about a year, and to his surprise has lost none. Never attempts molars, because he can not be certain of the fangs being perfectly clean. Never observed any appearance of calcarious deposit. Uses for destroying nerves, equal parts of arsenic and morphine with creosote, generally allows it to remain twenty-four hours, sometimes has to repeat, has by neglect of patient remained a week without any appearance of injury.

Dr. Bancroft uses arsenic and pledget of cotton saturated with creosote, retains application from six to twenty-four hours, if convenient to see the patient in six hours, and finds the work accomplished, he removes the application. He finds less complaint of pain from this application than when arsenic and morphine are combined.

Dr. Smith has used chloroform, and thinks it better than morphia, does not use it in any specific quantity, but saturates a piece of cotton, places it in the cavity in contact with the exposed pulp, and covers it *quickly* with wax, and has no trouble, rarely fills in less than a week or ten days after destroying the nerve, the chloroform destroys the nerve.

Dr. White is rather inclined to stick to the old style at the expense of being considered an "old fogy," has used equal parts arsenic and morphia, mixed in conserve rosa, but now uses arsenic alone on a pledget of cotton, saturated with creosote and rarely finds more than one application necessary. If there seems to be any degree of inflammation takes a small pledget of cotton saturated with creosote, passes it to the end of the fang and lets it remain there, fills immediately and finds less trouble than by waiting.

Dr. Farmer uses three parts arsenic and two parts sulph. morp., which rarely produces pain, when it does you have only to wait the proper length of time and it will subside. Has met with cases where the nerve seemed to be destroyed, but great tenderness existed at the apex of fang, in such cases has repeated the operation with satisfactory results.

Dr. Porter's expirience is similar to the foregoing. He has met with cases of tenderness of the apex when the nerve seemed to be destroyed, but on close scrutiny has discovered in such cases a *film* of bone to obstruct the nerve canal, and cut off communication and prevent the medicine from being conducted to that part of the nerve beyond this barrier. If this bony film be removed and the application renewed, there can be no difficulty. Prefers to remove the application as early as possible, if allowed to remain too long the arsenic is absorbed by the bone, which produces a soreness or sensitiveness of dentine, which it is difficult to remove.

Dr. Benedict here related a little experience. A lady called to have a tooth mounted on pivot, the fang was very sore, after considerable questioning he discovered that she had been trying to kill the nerve with arsenic. She had evidently applied too much, and the bone had absorbed it, he applied creasote, closed the cavity and let it remain ten days, when all soreness had disappeared, he filled the fang, mounted a tooth and had no further trouble.

SUBJECT 4TH. ALVEOLAR ABSCESS.

Dr. Benedict opened the discussion. His method of treatment consists in drilling, or otherwise cutting through, so as to pass a probe or broach in freely, then treat by application of creosote or nitrate of silver.

Dr. Chittenden pursues the same course, except that he used nitrate of silver first, to cleanse the cavity.

Dr. Whiting proceeds the same as in the treatment of a diseased fang, cleanses and applies creosote, rarely has any trouble, but sometimes when the patient takes cold the symptoms return.

Dr. Smith thinks there is but little use of any kind of treatment. If the tooth is *dead* there must be a discharge, and unless the absorbents *take it* up, *it* must make its escape, therefore seldom attempts to treat at all.

Dr. Bancroft's experience is similar to Dr. Smith's, but with a few exceptions of successful cases.

Dr. Whiting agrees with the two last speakers. When the periosteum is destroyed and all the attachments broken up, there is but little hope of success, has tried all modes recommended, has cut, scraped, etc., seeking for the bottom, but with no great success.

Dr. Porter reported a very hard case of a *central incisor* in which he tried nit. argart, chlo. soda. creosote, etc., and treated it nearly six months without success, finally used chloride of zinc, which healed it promptly, after which he filled the fang and crown with gold, and it is now doing well—this occured several years ago. Nearly all incisors and cuspidati succeed, but bicuspids and molars are doubtful.

SUBJECT 5TH.—MECHANICAL DENTISTRY.

Dr. Chittenden leads the discussion. He takes impressions in wax, and uses cups of peculiar construction, viz: with the center raised as high as the marginal edge of the cup, with a projecting *flange* on the outside to press out the cheeks and lips to prevent it from dragging in removing from the mouth. Uses plaster in some special cases of upper sets.

Dr. Benedict uses plaster both above and below for full sets, mixed about as thick as cream, stirring constantly until *nearly* ready to *set*, then places it in the mouth and retains it immovably until it is set, which requires from 5 to 8 minutes.

Dr. Smith uses wax, tried plaster without success.

Dr. Whiting. Although the taking of impressions is of great importance, it is not all—it is quite as important to obtain a good cast from the impression; thinks best to varnish the plaster casts with shellac, then oil, which causes them to separate readily, does not observe any specific time, but puts it through as fast as possible. and had the best success when most hurried.

Dr. Bancroft thinks it important to take casts as quickly as possible, from plaster impressions, otherwise the expansion of the plaster will destroy the fit.

Dr. White thinks plaster expands for the first twenty-four hours and afterwards contracts, and recommends rapid manipulation. The greatest difficulty occurs in partial sets, where the teeth are irregular. In such cases finds *gutta percha* just the thing. Warm it and press firmly to the arch, sometimes there is a little difficulty in removing, but its elasticity enables the operator to remove it, and when removed, it resumes the position it held in the mouth.

Dr. Farmer mixes wax and resin, fifteen per cent. of the latter. Sometimes uses gutta percha, and with Dr. White, thinks it excellent he warms it in hot water until sufficiently soft, and is enabled to take an impression so *fine* as to preserve the ridges and irregularities on the natural teeth.

On motion, adjourned until 7 o'clock, P. M.

EVENING SESSION.

Society met agreeable to adjournment, at seven o'clock, taking up the—

Subject 6th.—Getting up Casts.

Dr. Whiting, leading off in good style—says after taking plaster cast, he takes an accurate model in sand, for male dies he uses zinc, sometimes adding antimony, (but after a few meltings the antimony is lost,) which he pours into the model of sand, then melts a quantity of lead and dips the male cast in, holding it steadily until the lead hardens by cooling, but when a particularly nice cast is wanted, he places the male cast in a box and pours the lead upon it, and in difficult and irregular cases, uses Howe's Flask.

Dr. Bancroft's method is similar to the above, but sometimes uses one-third type metal which mixed with the other metals, makes the casts harder and requires a less number of duplicates.

Dr. Chittenden's mode differs but slightly from Dr. W. Ordinary zinc leaves little nasty indentations in the plate. Now uses sheet zinc, which is more smooth and uniform, but in very particular cases uses pure tin and lead.

Dr. Benedict thinks if very fine moulding sand is used and the metal not too hot, no difference will be found between *slab* and *sheet* zinc, and no difficulty with either.

Dr. Fields generally uses *sheet* zinc for male casts, but in very particular cases uses brass, it being harder and smoother.

Subject 7th.—Mounting Artificial Teeth.

Dr. Benedict, with great minuteness, describes his mode as follows:

Takes the impressions and casts as previously described—uses gold plate, *never less* than nineteen carats fine, swage plates between zinc and lead, not too much at first, uses a second set of casts and brings up very near as close as wanted, turns the edges of the rim, takes a new set of dies, drive up close and try it in the mouth, it generally will fit, if not, blames it on the *impression* and takes a new one, and proceeds as before, but with greater care. Rarely uses chambers, but places one or two thicknesses of paper over the hard palate to prevent rocking, try it in the mouth, arrange the teeth *just right*, grind the ends of the gums off square, so as to leave them stong, take a strip of plate, and solder on so as to cover the ends of the teeth (not lap over) but barely cover the ends, thus solders on another strip, which makes a double plate as a base, or rest for the ends of the gum, objects to the rim which laps over the ends of the teeth, as it forms a trough or cavity which it is impossible to keep perfectly clean. Now place within a German silver rim made for the purpose, and invest in plaster, put on the backings, uses double backings fitted to the teeth and dressed first, if teeth are irregular in length must make the backs especially adapted for each tooth, fit them into place and dress the backs rounding, put the teeth back to their place, put on some wax, remove the plaster and apply fresh plaster. He uses solder which melts but little, below the plate—for soldering to the plate, uses solder that flows a little easier. Solders all kinds of work with a mouth-pipe, it requires from ten to fifteen minutes to solder a full upper set, has done it in eight minutes and has put an entire job through from 9 A. M, to 6 P. M. If there should happen to be any crevice between the tooth and plaster, melt some clean white wax and pour it in, this keeps the work clean and sweet.

Dr. Chittenden expressed great gratification, had used the old rim, coming over the ends of the teeth, which he always deemed a sinkhole of filth. This mode of Dr. B. is "just the thing," is glad he come, and feels well paid for the trip, etc.

Dr. Porter differs in removing the rim although it amounts to the same—he pours plaster *inside*, a little over the edges of the teeth, thus retains them constantly in position, and is enabled to take them off and put them on at pleasure.

Dr. Field has done some cheoplastic work, but don't think much of it, uses also gold plate-work and continuous gum-work, the latter he thinks the best. Gets up his plates as before described, but uses a *double* plate, the inner one reaching just to the alveolar ridge and terminating in the upturned flange or rim under and against which the "body" is packed and flowed, rims inside and outside, thus giving great strength—never heard any complaint of weight. If a plate fits accurately, the weight is imperceptible. Uses Robert's Gum, never had a job to crack, scale or break, except from falling. If the furnace is hot, can mend or replace a tooth or teeth in half a day. Grind out to admit the tooth, put on a back and solder to the old back, build up with body and gum and bake as a new piece, no scar or imperfection can be seen, in appearance the mending can not be perceived.

Dr. Bancroft likes cheoplasty, *Blandy's Cheoplasty*, don't know anything about any other, has supplied cheoplasty to patients who had been wearing gold, and *they say* it tarnished less than gold, knows of several cases doing remarkably well.

Dr. Chittenden uses cast plates in the lower jaw on account of the weight, which he deems to be an advantage in many cases.

The subject of "*Solder*" was now opened.

Dr. Farmer uses no zinc in solder, but takes scraps of gold plate and adds silver and copper. In cheoplasty the fit is so perfect the weight is inappreciable, if it weighed three ounces it would not be observed. Had a case in which the muscles were trouble *some*, cut the muscles away and now has no trouble, and the lady has remarked she "would not take *two gold* plates for it." Makes his own compound.

On motion of Dr. Chittenden, a committee of three was appointed to prepare the business and a list of subjects for discussion at the next meeting.

Drs. Porter, Chittenden and Whiting were appointed the committee, with instructions to publish in the DENTAL REPORTER, not later than the August Number.

Motion of Dr. Benedict that each member is hereby earnestly requested to prepare an article or essay in writing, on one of the subjects to be discussed, to be delivered in person, or sent in by letter, and read before the society, also that all come prepared with written notes, of the heads or points for remark on the different subjects. Adopted.

Motion of Dr. Benedict that this society when it adjourns, will do so to meet again on the second Tuesday in January, 1860, in the city of Detroit. Adopted.

Motion of Dr. Bancroft that thanks of this Association be tendered to Drs. Whiting and Benedict, for the use of their rooms, occupied by the Association.

Motion of Dr. Porter that the thanks of the Association be tendered to Mr. Toland for his attendance and assistance, with an urgent hope that he will favor us with his presence at our next meeting. Adopted.

Being loudly called for, it was deemed necessary to make a response, which our *modesty* confined to an acknowledgment of the kindness and honors of which we were the recipient.

Motion of Dr. Farmer that a list of those present, and a brief sketch of these proceedings be published in the daily and weekly papers of this city.

At ten o'clock the Society adjourned, to meet next year at same place, of which ample notice will be given.

* * *

CINCINNATI, O., Jan. 25, 1859.

FRIEND TOLAND:—In the last number of the REPORTER, you gave notice of the formation of our Local Association and its proceedings up to that time. Please note now that it still lives, and with life gains new strength and vigor, and we confidently hope to boast of an organization which shall soon be without a rival. Such at least is our ambition, and I hope it will not be considered presumption in me to say we have the material to work upon and accomplish that end. We have held regular monthly meetings, and can assure our brethren in the East, West, North and South, that we will not leave a "stone unturned" for the promotion or advancement of our science. We wish to attract their attention because it may *possibly* be of some benefit to them, and I know it will be to us. One of our brethren in the west appears somewhat solicitous about the government of our association; be assured, kind sir, that our standard is high, and we will have a government, *second* to none. You may at some future day, be furnished with a copy of our Constitution and *By-laws*, also a list of the names of members. Wishing yourself and all our *professional* brethren in the Union, the greatest success and many happy New-Years,

I remain yours, &c., JUNIUS.

ANÆSTHETICS.

We quote the following article from the *Lancet*, for October 16, 1858, and have no doubt that all it asserts is true. Indeed, we have looked over the late Dr. Snow's work with much interest, and can heartily join in the recommendation of the *Lancet*, to give this "valuable monograph" a "thoughtful perusal." Notwithstanding all that is said, however, even by the highest authority, we believe the time is not far distant when chloroform will be abandoned as an anæsthetic agent. We again ask, why use an article of such uncontrollable power, when we have an equally reliable one in ether, and one which is entirely safe? It is notorious, that under the best conditions, and in the most careful hands, chloroform is a dangerous weapon. It is only lately that Mr. Erichsen, high surgical authority, has stated, both publicly and privately, that he uses chloroform as he would take an *express train*, ignoring, or risking, the danger of extra velocity. Now, is it not better to travel on the anæsthetic track a little more slowly, and be safe in our journey? Mr. Erichson himself intimates as much as this; and the evidence of every day only confirms us in the opinion we have expressed.

"The frequent recurrence of death from the administration of chloroform during the last few weeks, has induced a feeling of uneasiness and distrust of this agent both in the profession and out of it. It is very certain, however, that a great part of this feeling might very advantageously be transferred to the mode of administration which is still in vogue. It must not be forgotten that, in all these cases, the chloroform was administered loosely on a handkerchief, and in more than one instance, as has been proved, it was of a thickly woven texture, which did not allow of a free passage of air. This mode of administration is, we think, most unjustifiable. The experiment of the late Dr. Snow conclusively showed the necessity of carefully regulating the proportion of vapor in the air inspired. We strongly recommend to thoughtful perusal the valuable monograph on the subject of Anæsthesia which he has bequeathed to the profession. No one can rise from reading this valuable digest of a wide experience and the observation of ten years of scientific and practical labor, without a feeling of regret that so much carelessness should still prevail in the administration of this most potent vapor, and a sense of the necessity of a more extended instruction in the principles of anæsthetization. We commend the following sentences to the very careful consideration of surgeons:—

"The great point to be observed in causing insensibility by any narcotic vapor, is to present to the patient such a mixture of vapor and air as will produce its effects gradually, and enable the medical man to stop at the right moment. Insensibility is not caused so much by giving a dose as by performing a process. Nature supplies but one mixture of diluted oxygen, from which each creature draws as much as it requires; and so, in causing narcotism by inhalation, if a proper mixture of air and vapor is supplied, each patient will gradually inhale the requisite quantity of the latter to cause insensibility, according to his size and strength. It is, indeed, desirable to vary the proportions of vapor and air, but rather according to the purpose one has in view, whether medical, obstetric or surgical, than on account of the age or strength of the patient; for the respiratory process bears such a relation to the latter circumstance, as to cause each person to draw his own proper dose from a similar atmosphore in a suitable time.'

"The proportion of chloroform most suitable to produce insensibility, Dr. Snow found to be about four cubic inches of vapor, or rather more than five grains of chloroform to one hundred cubic inches of air. With a properly arranged inhaler, it is easily possible to supply the vapor in this fixed position. This simple precaution would rob chloroform of nearly all its terrors and its dangers. It is a very surprising consideration, that while the niceties of surgical manipulation are invariably attended to with the utmost care, the production of anæsthesia is very frequently left in the hands of quite inexperienced persons. It is sad to see the issues of life and death treated with indifference; it would be yet more so, if we were not well aware that the fault is one of thoughtlessness, and that those who have fallen into it will probably shrink from a similar error now that it has been pointed out so forcibly by recent events."

FRACTURES OF THE LOWER JAW.

The use of Plates, in Combination with Gutta Percha, in treatment of fractures of the Lower Jaw.

BY A. W. ALLPORT, DENTIST, CHICAGO.

Editors of the Chicago Medical Journal:—In the August number of your journal, Dr. M. O. Heydock reported a case of fracture of the lower jaw, at its neck.

This was a case of peculiar interest, from the fact that it had been under treatment two weeks, and it was found that no ordinary bandages or appliances would keep it from swaying to one side; of course a deformity would have been the result of such practice. At the expiration of this time, Dr. H. called on me, with the patient, and I constructed for her two plates, as described in said report, which proved to be just what was required for the successful treatment of the case.

On the 19th of September, Mr. A. G. received a blow upon the right of the lower jaw, which fractured it through the median line. The case was seen by Professor Freer, who applied the ordinary bandages, used in such cases, but found it would be impossible to secure a satisfactory result in this way, and at once placed the patient in my hands.

When the case came to me, I found the right side of the jaw depressed about eight lines below the left, and the left, and the muscles acting with so much force, that it was found difficult to bring the two sides into position, so that the lower teeth would articulate with the upper correctly, and when in position difficult to keep them so.

With the aid of an assistant, the fracture was adjusted, and an impression taken in wax of the lower teeth, also an impression of the upper teeth, and from these, plates were swaged up, smilar to those used in the case of Mrs. H. These being brought into proper position on the teeth, were removed and soldered together. Thin layers of gutta percha, were then warmed in hot water, and placed inside of each plate and introduced into the mouth, as warm as the patient could bear; the jaws were pressed firmly together, until the teeth articulated perfectly, *through the plates*, which had been filed away for the free egress of the ends of the teeth, and were held thus until the gutta percha had been thoroughly cooled by the application of cold water. This done, the patient could not open his mouth, and of course the jaw was held firmly in place, which rendered union perfect, and a natural articulation of the teeth. The plate was removed on the 18th day.

In the case reported by Dr. Heydock, it was supposed that the separation of the upper front teeth, so as to admit of a bar or wedge being passed between them, from the plate on the lower jaw, was of service; but from this case it would seem that the wedge can be dispenced with, for the gutta percha insinuates itself into all separations, and adapts itself to all the irregularities and inequalities of the teeth, in such a way, that the patient can not move the lower jaw, and of course it is held firmly wherever it is placed, making this appliance equally serviceable whether the front teeth are separated or not.

The fact that the lower jaw hangs loose, and its muscular attachments draw it in various directions, renders the treatment of the fracture of this bone far from being the simplest in surgical practice. In fact, I think that any experienced surgeon will bear witness to the correctness of the statement, that there have been as few cases of perfectly satisfactory results, in the treatment of fracture of the lower jaw, as in almost any other class of broken bones. But if the upper jaw be made the foundation, to which the lower jaw can be immovably attached, by the application of plates constructed as above mentioned, the treatment of these fractures can be made comparatively simple, and much more satisfactory.—*Chicago Medical Journal.*

The aplication of gutta percha in combination with the metal we deem a valuable suggestion and of practical value, as shown by the success of Dr. Allport in the foregoing case. We infer from the paper that it enabled the Doctor to dispense with bandages entirely, thus making a much neater and cleaner operation than in common. It also allows of perfect circulation of the blood of both systems, arterial and venous, which is a desideratum with all surgeons. We would advise the filing of this case in the memory where it may be had readily when needed.—*American Dental Review.*

THE SCIENTIFIC ARTIZAN.

A Journal devoted to Science, Art, Discovery, and Invention, published weekly,—price, $2 a year; $1 in advance; and $1 at the end of six months.

It is the representative of the American Patent Company, recently established in this city, and composed of respectable, wealthy, influential and scientific men. The paper contains, each week, a full report of all patents issued during preceding week, and is filled with interesting scientific information on almost every subject, and is therefore desirable and valuable, alike to the literary, scientific and professional, or the inventor, mechanic, and agriculturist,—each will be well repaid for its regular perusal; and those who have improvements, and design patenting them, will do well to consult the American Patent Company, before taking steps in the matter; they will thus be able to learn—1st, whether a patent can be obtained, 2d, whether it will be valid and can be sustained, and 3d, whether its merits will justify the labor and expense.

The following we copy from the first number, in which will be found something of the objects and aims of the Company:

"The American Patent Company proposes:—

1. To *procure patents* with the greatest possible dispatch, and the least necessary expense.

2. To *negotiate the sale* of such patents, as upon due testing prove to be worthy of public patronage.

3. To *test*, by actual experiment, the practicability and utility of all patents coming into its hands.

4. To *investigate Patent Claims*, so as to determine whether a discovery or application is patentable or not.

5. To *execute for inventors*, mechanical and other drawings, in the highest style of art, and with absolute correctness.

6. To *introduce new inventions* into general use, by presenting their claims through the columns of this paper.

7. To furnish the most finished engraving for the use of patentees at the lowest price.

8. To publish a weekly Scientific Journal, embodying all information pertaining to the patent business.

To make the objects of the Company perfectly clear, we beg to discuss briefly each of these separate departments, and to examine its claims to public confidence.

The Company is composed of gentlemen of well-known business capacity, and high reputation for integrity, possessing capital and influence. An examination of their names will show that these are not the men to engage in an illegitimate speculation. They have organized themselves under the law as a body corporate and politic, with all the rights and privileges usually accorded to such corporations. The capital stock is ONE HUNDRED THOUSAND DOLLARS, which will be increased if it be found to be necessary in the prosecution of its business.

THE VULCANITE BASE.

We have received a great many inquiries in regard to this style of work. We can now say that the trade is open for the Profession.

Two rival companies, the "India Rubber Company," and the "Gutta Percha Company." The former propose to sell vulcanizing machines and rights for $50, with a perpetual tax of one dollar on each piece of work that may be made. The other sells machines and rights at $100, being free from any tax whatever.

We have recently had opportunities of seeing a considerable quantity of this work; and the more we see of it, the better we like it, as it is light and elastic, congeniel to the mouth, and apparently perfectly impervious to the secretions.

For more specific information of prices, manner of doing work, etc., see advertisements.

LADIES IN THE DENTAL PROFESSION.

Dr. D. W. JOBSON, of New York, is making efforts to induce women to enter the Dental Profession, with fair hopes of success.

We heartily second the movement. Even now we almost imagine ourself seated in what is usually termed the "chair of torture"—dreaded now no more—by our side a beautiful lady, with sweet breath and glowing cheek, her delicate arm encircling our head, our cheek resting against a bosom still more soft, looking up into eyes, so tender in their gaze—they take away all dread, and in their sympathy even divide the pain itself. With such a dentist, we would want our teeth examined every twenty-four hours.

EVERY MAN HIS OWN DENTIST.

We have been favored with a copy of a neat pamphlet of 24 pages, bearing the above caption, which, as the title page informs us, is "A Treatise on the proper management of the

Teeth, with full instructions to preserve and keep them beautiful, to the most extreme old age, without the aid of the Dentist; with instructions by which to detect quack dentists, and the propriety of avoiding patronising the same. By H. H. Black, Surgeon Dentist.'' Price, 25 cents.

We have hurriedly glanced over this production, and find in it much interesting information and many valuable hints and suggestions, which, if properly applied, will go far toward the object aimed at; but we think the Doctor—in giving "instructions to *preserve and keep the teeth beautiful to the most extreme old age*''—claims a little too much—more than can be accomplished in one generation,—while much may be done. There is undoubtedly a large amount of caries induced by constitutional causes, transmitted from parent to child, which will require the coöperative skill of the dentist and physician, with the most vigilant care of parents, for several successive generations; but a beginning in the right direction can not be made too soon, the community can not become too soon nor too well informed on this subject. If it were the loss of the teeth ONLY, it would not be so bad; but comfort, health, and beauty are involved. No person can long enjoy either of those blessings, without good teeth. We hope this little Book will have a large circulation and be the means of doing much good.

SPECIAL NOTICE.

In an advertisement of MOSES DOLPH, on the cover, of "The Dental Lamp,'' the language gives a *false impression.*

The last article purchased from him was May 5th, 1857, and prior to that time, the goods were made expressly to my order, at specified prices. My name is, therefore, unnecessarily and *improperly* used, for A PURPOSE!

My arrangements since then are very SUPERIOR. Manufacturing by machinery in large quantities, I am enabled to *sell at* what it *costs* to manufacture by hand, and still make a HANDSOME PROFIT. For particulars, see advertising pages on Catalogues. JOHN T. TOLAND.

THE CINCINNATI MEDICAL NEWS

Is the title of a monthly paper, edited and published by Prof. A. H. BAKER, M. D., of this city,—which should have been noticed in the November number, but was overlooked. This is a free, bold, and independent publication, and calculated to do much good in the profession, by exposing error and advocating truth. Generally there is too much disposition to "smooth things over." Give us the man who is always ready to "face the music," and such be believe Dr. Baker to be. We bespeak for the *Medical News* a large circulation. Price, fifty cents a year.

SHERWOOD'S FORCEPS.

For three years (viz: from January 1st, 1856), Mr. H. R. Sherwood has manufactured *exclusively* for me—all his work passing through my hands. At that date, there were about two hundred pairs of Sherwood's Forceps in market. Since that date, I have sold nearly $12,000 worth of his instruments, and can not get them made fast enough to supply the demand. Still I see advertisements of "Genuine Sherwood's Forceps," which I must acknowledge my inability to account for, unless it is the old shapes and styles made several years ago. Of these we have daily offers to trade or exchange, which we generally decline, because we want only the best of every thing; and in Sherwood's Forceps, such IMPROVEMENTS have been made, that the *old* styles would not be *recognized* in company with the *new*, except by the *name*. John T. Toland.

THE DENTAL ENTERPRISE.

A monthly publication, bearing the above name, has fallen under our notice. It is an enterprise of rare merit; and we would advise all to subscribe. It is published by Henry Snowden. Price, fifty cents a year.

☞"*The Cincinnati Dental Lamp*"—Is the title of a new aspirant to *fame* and *wealth* in dental literature. We have not been favored by the publisher with a copy, but by *accident* obtained the November issue, Vol. I, No. 1.

From the prospectus we learn, that "the *Lamp* will be published quarterly and will be what its name imports," "*a light to dispel the darkness which hangs brooding over Dental Science.*" Truly, we trust the *Lamp* will be able to accomplish the *task* which it has assumed. The *Lamp* is neatly printed, on good paper, and filled with matter highly interesting to the profession. The intelligence, sprightly wit and humor of the Editor, Dr. J. M. Brown, are readily observed on every page.

The *Lamp* will be furnished to subscribers, for twenty cents a year. Verily this is *cheap enough*, those who can not afford to subscribe for the *Lamp*, deserve to remain in *darkness*.

We wish the *Lamp* success on its mission; but if the Editor expects a "liberal profession" to reward him for his labors, before his expectations are realized we fear he will have occasion to say with the poet—

> "The Lamp must be *replenished*, but even then,
> It will not burn so long as I must watch."
> But while the *Lamp* contrives to burn,
> The vilest sinner may return.

☞ *The Peninsular and Independent Medical Journal*—Devoted to Medicine, Surgery, and Pharmacy.

We are in receipt of several numbers of this valuable Journal. It is ably and independently conducted, by a highly scientific corps of Editors, and is calculated to effect much good by its independent tone and the large amount of practical and scientific information with which each number is laden. We bespeak for it a large circulation.

The *Journal* contains 64 pages exclusive of advertisements, and is issued monthly, at Two Dollars a Year in advance. Published by Higby & Stearns, 162 Jefferson Avenue, Detroit, Michigan.

☞ *The Lewiston Falls Journal* (Lewiston, Maine)—Edited by Nelson Dougley, jr.; is a valuable family newspaper, which deserves a large circulation and close perusal. We notice in it an article on "Popular Dental Knowledge," which we commend to attention of all readers of the *Journal*. This is a step in the right direction. Let the *people* be *educated* in the structure, value, *use* and *abuse* of their teeth, and Dental Science will rise to the dignity and importance to which it is entitled. For this result, we must depend on the medical profession and the secular Press.

APOLOGY.

Indiana State Dental Association.—We had the pleasure of being present on the 28th and 29th of December, at a meeting of the above named Society, in the city of Indianapolis, and were well paid for the loss of time and expense; indeed, it has rarely been our fortune to witness so much systematic business order, intelligence and harmony of feeling, in any gathering of this kind. Each man seemed to have come for *a purpose*, which he fully understood, and was earnest in executing.

The discussions were interesting and ably conducted,—the details of which we *expected* to publish in this number; but through some mishap of our friend "Perine," (which he can explain for himself), we have neither notes, mem. or report. We *loaned* our "*notes*" to Dr. P., to make up a report for the New York *Journal*, under promise of furnishing us with advance sheets by the 10th of January, at latest. We have waited from day to day, until the 10th of February, but no report cometh; we can wait *no longer;* as we have neither our own notes nor Dr. Perine's report, we must go to press without it, with the promise that the report will be found in the March number of the *Dental Register of the West*,—together with a report of the College Commencement, College Association, and Proceedings of the MISSISSIPPI VALLEY ASSOCIATION, all of which take place February 20th, 21st, 22d, 23d and 24th. The meetings of this Society are attended with much interest, and will well repay a visit from the profession of the neighboring States.

If the friends of the Indiana Association will forgive us this time, we will promise the like shall not occur again, as we have resolved to adopt a new principle in reporting, viz: "Neither borrow nor lend."

THE DENTAL REPORTER.

This closes the *first* volume of the *Dental Reporter*, as a subscription Journal.

When we commenced its publication, our aim was to be the *cheapest* in the world, and furnish fresh and reliable information on all subjects interesting to the profession; to which we expected a hearty and enthusiastic response, in showers of 25 cent pieces We thought every dentist in the United States, besides many physicians and others, would become immediate subscribers, so as to make a list of at least 10,000. Well, probably there are that many who would like to consider themselves subscribers to the "Reporter," but they forget this is a fast age—we can't wait, they have been too *slow*. Our list has not exceeded 4,000, which, at 25 cents, won't pay *first cost!* while others have started at 20 cents, 10 cents, and even 5 cent.

The *Reporter* has been devoted to the profession, not as an "advertising journal," for its pages have been kept free from advertising, except in a separate department, such as every literary journal, has annexed for advertising purposes.

If we can not be the cheapest and have the largest circulation, we are determined to be among the most respectable, and therefore concluded to take ourself out of *bad company*.

We had resolved to raise the price of next volume, to $1 a year, and have already received several subscriptions for the next volune; but within a few days, we have concluded to purchase tho DENTAL REGISTER OF THE WEST, with its books, credits, and subscription list, and will hereafter be proprietor and publisher of the same, and will therefore abandon the *Reporter*, which will end its existence with its first volume. Those who have paid on the second volume of *Reporter*, can have the amount applied on the *Register*, or the money refunded, as they choose, by notifying us of their desires.

Drs. J. TAFT and GEO. WATT will continue as Editors of the *Register*,—the subscription price is $3 a year, in advance.

After the close of the present volume which will end with the June number, the *Dental Register* will be issued MONTHLY, instead of Quarterly,—and at the same price per year.

* * *

DENTAL REGISTER.

Having become proprietor and publisher of this highly respectable and popular Journal, I will cease the publication of the *Denial Reporter*, and devote myself to the interests of the the *Register*. Drs. TAFT and WATT will continue as Editors.

At the expiration of the present volume, which ends with the June number, the *Dental Register* will thereafter be issued monthly, at the *same* price as heretofore, viz: $3 a year, in advance, only that *advance* payments will be insisted upon. In changing from a quarterly to a monthly, both *labor* and *expense* will be trebled; but as the advantages to the profession are so apparent, I anticipate a like increase in the subscription list. All friends of the movement will at once see the propriety of exerting themselves to increase the circulation of such a Journal. Its communications, reports and selections will always be fresh and new—always in advance of every other journal. It will be issued and sent promptly, to all prompt paying subscribers.

New cash subscribers respectfully solicited.

Those *indebted* to the "REGISTER," will confer a favor by prompt remittance of balance due, as I wish to square up the old books, and start anew. JNO. T. TOLAND.

FRANCIS' GALVANIC AND ELECTRO-MAGNETIC PROCESS FOR EXTRACTING TEETH WITHOUT PAIN.

Office Rights, for the full term of the Patent, including complete apparatus, with instructions, will be sold for $60.

Those who have a Battery, will be furnished with a Right for $50.

JNO. T. TOLAND,
38 *West Fourth Street, Cincinnati, O.,*
Agent for the West and South.

GALVANISM IN EXTRACTING TEETH.

At the stated meeting of "Pennsylvania Association of Dental Surgeons," held December 7th, 1858, the Committee on Galvanism made the following report, which, on motion, was adopted:

MR. PRESIDENT: The committee appointed by the Association to investigate the merits of applying the galvanic current in the extraction of teeth, would beg leave to report, that they have attended to the duty assigned them.

Immediately after their appointment, the members of the committee were furnished with galvanic batteries, and instructed how the current should be employed, by the agent of the patentee. These bateries have been used, and the instructions followed by the committee in their investigations. Desirous of arriving at an impartial and unbiased opinion, and believing that this could only be obtained from a somewhat lengthened series of experiments, the committee have permitted several months to elapse before presenting their report.

Their experience, which has been gained in *private practice*, has varied from time to time. At one period, certain members were disposed to believe that they recognized in the application of the galvanic current, all that had been claimed for it, and all that had been said in its favor; but a later experience and more careful observation convinced them to the contrary. They have found that although in a certain proportion of cases they have had evident alleviation of suffering, and in some the assurance that the operation has been absolutely painless, yet that in the majority of instances, the pain of extraction has been unmitigated, and in some cases the application has been denounced as productive of the most excruciating suffering.

With the view of ascertaining how far galvanism was instrumental in alleviating suffering, the operator, when engaged in extracting a number of teeth for one individual, would occasionally intermit the current without apprising the patient of the fact. On being questioned relative to the sensations experienced, the answers were frequently, though not always, the same as when the current was perfectly established.

Therefore, while your committee does not feel warranted in positively condemning the use of the galvanic current, as an anæsthetic agent in the extraction of teeth, they can not, in justice to their convictions, give it that commendation which it has received from the hands of others.

Having discharged their duty, your committy would respectfully request to be dismissed from further consideration of the subject.

J. H. McQuillen,
J. Foster Flagg,
T. L. Buckingham,
Jas. E. Garretson,
C. N. Peirce.

H. R. SHERWOOD,
MANUFACTURER OF
DENTAL INSTRUMENTS,

Respectfully informs his friends and the public, that his connection with Dr. J. M. Brown ceased on the 1st day of January, 1856; therefore all instruments sold by Dr. Brown, or others of my make, requiring repair, must be sent to ME, PERSONALLY, or to

JOHN T. TOLAND, No. 38 WEST FOURTH ST., CIN.,
Who will hereafter have the exclusive sale of instruments of my manufacture and to whom all orders should be addressed.

Forceps, Pluggers, and Scalers, and all other Dental Instruments of any required style or pattern, made promptly to order and warranted.

Instruments repolished, repointed, and repaired, and all kinds of Jobbing executed at short notice, and on reasonable terms.

H. R. SHERWOOD,
Manufacturer of Dental Instruments, Cin., O.

S. WARDLE,
DENTIST

Would say to the Profession that he is still prepared to do all kinds of
MECHANICAL DENTISTRY,
ESPECIALLY BLOCK WORK.

In the very best manner, and at the shortest notice. He also furnishes MATERIALS OF THE BEST QUALITY to those who wish to put up their own Blocks, or Continuous Gum Work.

Office and Residence, 142 W. Fourth St., bet. Race and Elm, Cincinnati, Ohio.

☞ N. B.—Specimens of Block Work can be seen at TOLAND'S DENTAL DEPOT, No. 38 West Fourth Street, Cincinnati, Ohio.

THE ECLECTIC
COLLEGE OF MEDICINE,
CINCINNATI, OHIO.

Two Sessions are held annually. The Winter Session commences about the middle of October, and the Spring Session early in February, and continues sixteen weeks.

A full and thorough course of lectures will be given, occupying six or seven hours daily, with good Clinical instruction, in Commercial Hospital.

The arrangement of the Chairs is as follows:

T. E. St. JOHN, M. D.,
Professor of Anatomy and Physiology.
J. F. JUDGE, M. D.,
Professor of Chemistry and Pharmacy.
A. J. HOWE, M. D.,
Professor of Surgery.
C. H. CLEAVELAND, M. D.,
Professor of Materia Medica, and Therapeutics.
WM. SHERWOOD, M. D.,
Professor of Medical Practice and Pathology.
J. R. BUCHANAN, M. D.,
Emeritus Professor of Cerebral Physiology and Institutes of Medicine.
JOHN KING, M. D.,
Professor of Obstetrics and Diseases of Women and Children.

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